



Annual Report 1980-81
Department of Agriculture New South Wales



Fodder conservation and supplementary feeding are widely used to buffer the effects of bad seasons and periods of stress, such as shearing. Our cover shows maize and lucerne hay being fed to sheep on Mr Barry Edwards' property, "Ben Nevis", near Glen Innes.

Supplementary feeding in good seasons to help animals maintain full production, or in droughts to ensure their survival, has been a long-term policy of this Department. During 1980-81, the Department called on its experience and resources to produce three special publications for drought conditions: "Drought Management and Feeding of Sheep", "Beef Cattle Management in Drought" and "Drought Management of Dairy Cattle". These comprehensive publications were distributed free.

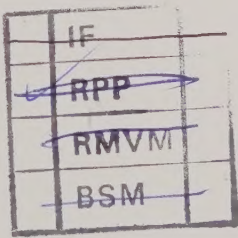
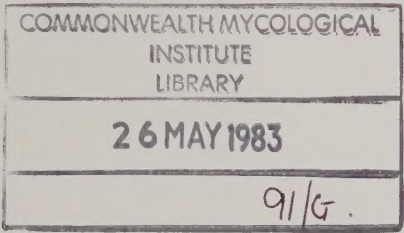
At the same time, a continuous flow of timely information went out to stockowners from the Department's field days, radio and television broadcasts, news releases, newsletters and farm visits. The efforts of this Department, other New South Wales State Departments, Pastures Protection Boards and other agencies, clearly reflect the State Government's concern for rural primary industry. They have also helped establish an improved drought alleviation program for future years. As Minister for Agriculture and Fisheries Jack Hallam said recently, "New South Wales offers the most comprehensive drought assistance package of any State".

1980-81

PARLIAMENT OF NEW SOUTH WALES

REPORT
OF THE
DEPARTMENT
OF AGRICULTURE
FOR THE

Year ended 30 June, 1981



Ordered to be printed, 11 March, 1982

The Hon. J. R. HALLAM,
Minister for Agriculture,
Sydney.

Sir,

I have the honour to present a report reviewing the
activities of the Department of Agriculture for
the year ended 30th June, 1981.

G. H. KNOWLES,
Director-General

The objectives of the New South Wales Department of Agriculture are to safeguard, and improve the productivity of, the agricultural industries of New South Wales; and to encourage the orderly marketing of safe, acceptable produce, with consequent improvement in the prosperity and quality of life of both rural and urban communities.

The main aim of this report is to enable the Minister to table in Parliament a comprehensive record of what the Department did to attain its objectives during the year under review.

This report is also distributed to libraries, industry leaders and others throughout Australia and overseas, usually on an exchange basis. It is not intended for the wider audience catered for by other, more regular, publications. More detailed statistical information on agricultural industries and commodities is available from the Department and from other sources.



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New South Wales Department of Agriculture

Annual Report 1980-81

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Foreword by the Director-General of Agriculture, Mr G. H. Knowles



The Season

The events described in this report all took place in a year of devastating drought which began in May, 1979, reached its worst in February, 1981, and finally broke in the following June.

Drought relief imposed a heavy direct cost on the State. The New South Wales Government extended the scope of the total relief package and increased payments to drought-affected primary producers. Indirect costs, such as the \$50 million decline in rail freight income because of the poor harvest, also rose substantially.

Special programmes aimed at helping farmers to cope with the drought were undertaken in all regions by staff of the Department of Agriculture.

Restructuring

The first major reorganization of the Department's structure for 40 years was completed during the year. The whole process took 13 months.

The restructuring began with the Department's Executive, and included front-line advisory and research staff. Five Regional Directorates of Agriculture were established to replace what previously were separate regional administrations for advisory, research and veterinary services. Regional Boards of Management have been established and are responsible for co-ordinating all of the Department's activities within each region. The number of divisions was reduced and extensive delegations moved from Head Office to the country.

Special attention was paid to improving and expanding the Department's advisory services.

The restructuring exercise took place not only within the context of the worst drought this century, but also without exceeding the Department's staffing and budgetary levels. Many of the additional positions created in country areas were made possible by reducing the number of staff in Head Office.

Orange Regional Centre

The fifth regional research centre was opened at Orange by the Premier in March, 1981. The Orange

Research and Veterinary Centre, which cost \$4.2 million, contains the Department's main administrative, research laboratory and veterinary facilities for the new Central West, South Eastern and Illawarra Region.

Guayule

A research programme was established to develop guayule, a plant with potential as a source of natural rubber. The programme is based at Condobolin Research and Advisory Station and at 10 other sites across the State. The experiments have progressed faster than expected, enabling trial rubber extraction procedures to be initiated.

Cotton Programme

The SIRATAC Management System (CSIRO and Department of Agriculture Tactics for Cotton Growing) met with further success during the year and will be introduced as a commercial venture in the 1981-82 season. The system, based on work by the CSIRO and the Department of Agriculture, was tested in the Namoi and Gwydir Valley cotton area. SIRATAC grew from a research programme into a computer based management system to provide decisions on spraying for insect control. The programme now involves the University of Queensland and the Queensland Department of Primary Industries.

Brucellosis Eradication

An additional 10 000 cattle herds were confirmed "free of brucellosis during the year, and the number of herds in quarantine was halved. Testing has expanded into all areas of New South Wales and already 87 per cent of the State's herds have been tested. On an area basis, 38 of the State's 59 Pastures Protection Board districts are now provisionally free of brucellosis.

Government Inquiries

The Department provided administrative support for four New South Wales Government Inquiries. Departmental officers either chaired or served on three of them. The inquiries were: The New South Wales

Grain Handling Inquiry; the Young Farmer Establishment Scheme Inquiry; the Egg Industry Inquiry; and, the 2,4,5-T Inquiry.

Ethanol Production

Shakedown trials using wheat as stockfeed in an ethanol production plant commenced at the Department's Agricultural Engineering Centre at Glenfield. The plant, which was developed at the Centre as an experimental and demonstration 100 litre per hour prototype ethanol production unit is expected to be commissioned in 1981.

Overseas Aid

In March, 1981, two Departmental officers and their wives and families began a project to develop a model beef cattle farm on Hainan Island in China. The programme is part of a joint Province-State relationship agreement between the Governments of Guangdong Province in China and of New South Wales in Australia.

R. M. Watts Retires

After more than 43 years' service with the Department of Agriculture, the former Director-General, Mr Roy Watts, retired on 4th July, 1980. Mr Watts was an outstanding veterinarian and administrator and was, in turn, District Veterinary Officer, the Chief Veterinary Officer, Chairman of the Board of Tick Control and, Chief of the Division of Animal Industry. In 1965 he was appointed Director-General. He was awarded the Imperial Service Order in 1974, the Gilruth Prize in 1978, and he became an Officer of the Order of Australia in 1980.

Restructuring of the Department

Overview

On his appointment, the Minister for Agriculture, the Hon. J. R. Hallam, M.L.C., initiated a programme to restructure and further regionalize the Department and increase the front-line advisory services to the farming community. These major goals were to be introduced and implemented by 30th June, 1981.

What followed was a unique and innovative chapter not only in the Department's history but also in the history of the New South Wales Public Service. The objectives set and challenges met by the Minister involved the complete restructuring of the Department, including considerable devolution of authority to the regions, and was achieved within the timetable. This achievement has even greater prominence considering that it was undertaken within the staff number and funds allocated by the Premier and the Treasury. The co-operation and assistance of the staff involved exceeded all expectations and the atmosphere of change within the Department became a great stimulus for the generation of many original and innovative ideas. The assistance of the Premier's Department, the Treasury and the Public Service Board is fully acknowledged and it is opportune to thank the officers of those Departments for their co-operation and help.

The restructuring of the Department was achieved without jeopardizing the excellent technical and professional service provided to the people of New South Wales, and whilst contending with the severe effects of one of the worst droughts on record.

At 30th June, 1981, the Department had a completely new Executive, new Divisional structure, new Regional structure and many new operating methods. A detailed timetable of events during this period appears in Appendix V.

Background

Before the restructuring, the Divisional structure of the Department, introduced in 1940, remained more or less intact, with progressive shifts in responsibility from Head Office to the regions. These shifts in responsibility had strengthened the system of regional administration begun in 1953.

To identify the best way to devolve responsibility to the regions and to identify how service to the rural community may be improved, the Minister initiated a series of five Departmental seminars; four in the regions and one in Sydney. The seminars were designed to involve staff in the analysis of the Department's organization and operating methods and to identify how the Minister's objectives could be achieved. The seminars were a unique experience in the New South Wales Public Service in employee participation. The Minister attended and addressed all seminars.

Following the seminars it was announced that a Working Party would be appointed to study and recommend the most appropriate method to reach the objectives. As a matter of procedure, the minutes and recommendations of the Working Party were forwarded to the Executive for information, consideration and progressive implementation.

Following Working Party recommendation, on 10th October, 1980, a range of policy decisions were announced to all staff. One of the major decisions was to devolve more responsibility to the regions. Extensive new delegations were promulgated in early December. Other decisions involved an increase in the number of staff providing advisory services; the upgrading of career opportunities and status of advisory officers; increased human resource development and provision of additional support staff. The major commitment was the establishment of single regional boundaries for advisory, research and regulatory functions, the restructure of the Executive, and the establishment of a new Divisional structure.

The five new regions were to be:

- The North Coast Planning Region (Departmental Region 1).
- The New England, Hunter and Metropolitan Planning Region (Departmental Region 2).
- The Orana and Far Western Planning Region (Departmental Region 3).
- The Central Western, South Eastern and Illawarra Planning Region (Departmental Region 4).
- The Murray and Riverina Planning Region (Departmental Region 5).

To facilitate this transfer of authority from Head Office, a Regional Director of Agriculture was appointed to each of the five regions, in January 1981. The Regional Directors would, each be assisted by a Regional Director of Advisory Services, a Regional Director of Research, a Regional Director of Veterinary Services, and a Regional Administrative Officer.

Concurrent with the establishment of a unified regional structure and Regional Directors of Agriculture was the re-organization of the Executive.

After extensive consultation it was announced that the Executive would consist of the Director-General, Deputy Director General and four Executive Directors. The Director-General and the Deputy

Director-General were each to be supported by an Executive Assistant.

The Executive Directors were assigned the specific responsibility for four functional areas. These were: Research and Advisory Services; Regulatory Services; Policy and Services; and Administration. The Executive Directors were equivalent to the previously designated Assistant Director-General. The new Executive was a major change to the previous Executive structure. The functional responsibilities of the Executive Directors are shown in the organization chart on page 13.

In establishing the positions of Regional Directors of Agriculture it was recognized that the role, function and structure of Divisions would change. Consequently, a new Division of Plant Industries was established, incorporating the previous Division of Plant Industry with the Division of Horticulture, and a new Division of Research and Advisory Services was established, incorporating the previous Division of Research Services with the Division of Extension Services.

The position of Chief Administrative Officer was established to head the Administrative Branches.

A Special Advisory Unit was established to advise the Minister on the activities of the statutory marketing authorities under his legislative responsibilities.

Events moved rapidly from this time on. New front-line positions were established in the country with consequent deletions of positions in Sydney.

A Board of Management was formed consisting of the Executive which would meet regularly to identify corporate goals and to ensure overall Departmental co-operation.

A Budget Priorities Committee was established to review budget programmes and ensure that expenditure priorities are in accordance with Departmental policy.

The Staff Establishment Review Committee was upgraded. All vacant positions required for filling and transfer were to be submitted to the Committee for approval. The Committee was to monitor the Department's staffing situation regularly.

Subsequently, major changes in operating procedures and a progress report on regionalization was announced to all staff. This announcement included initiatives in human resource development, staffing in Regional offices, open office planning, access to STD telephones in Regional offices and arrangements of administrative and financial delegations to Regions.

In late March, 1981, further major policy initiatives on Regional and Divisional working relationships were announced.

One such initiative stated that the principal objective of creating a single Regional administration was to bring together in each Region the Department's various services and activities.

Regions were to become the main source of providing budget estimates and monitoring expenditures. Regional Directors of Agriculture would achieve the Department's goal of self-management and would be able to re-allocate funds between programmes within the Regions, provided those allocations are undertaken within the Department's overall priorities, and with Budget Priorities Committee approval as appropriate.

In this new budget system, the Chiefs were to play a most important role in identifying and assisting with developing estimates for State-wide programmes. Programmes spanning across Regions would be checked with appropriate Chiefs. If there were any doubt, the Budget Priorities Committee would determine priorities.

The pace of advertising and recruitment continued while, at the same time, new operating procedures, delegations, financial systems and discussions with the unions were undertaken. In late April, 1981, a considerable number of new regional appointments had been announced. At the beginning of May the Chiefs and the Regional Directors of Agriculture had begun to work out methods of co-operation and extending a greater degree of expertise to the community in New South Wales. On 30th June, 1981, the Director-General reported to the Minister that the regionalization and restructuring of the Department had been introduced in accordance with his wishes. At the same time almost 200 new positions had been established in the country.

THE AGRICULTURAL REGIONS OF NEW SOUTH WALES — APPROVED TO OPERATE FROM 1ST JULY, 1981.



Region 1: **NORTH COAST**
Headquarters Lismore

Region 2: **NEW ENGLAND HUNTER AND METROPOLITAN**
Headquarters Gunnedah

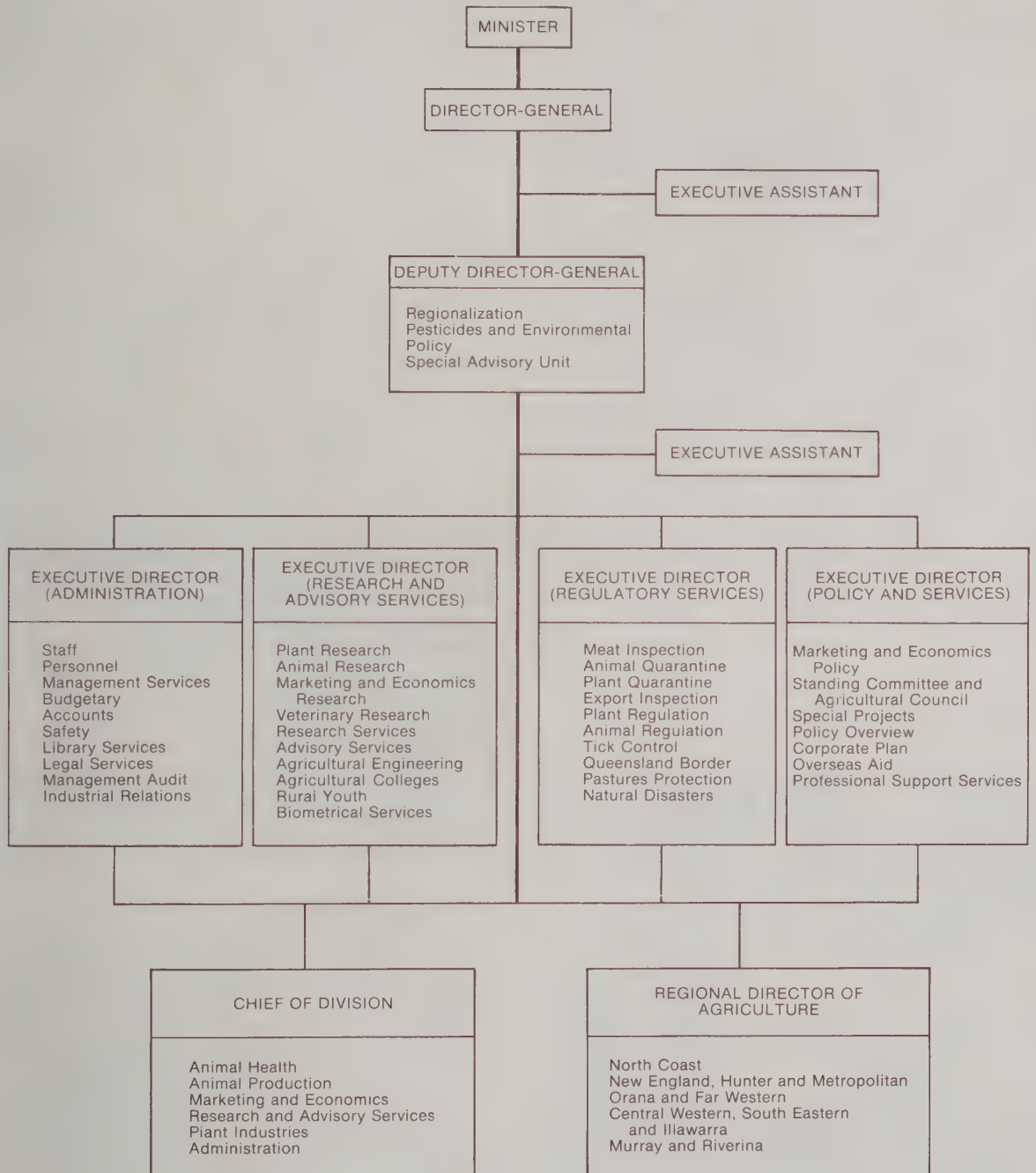
Region 3: **ORANA AND FAR WEST**
Headquarters Dubbo

Region 4: **CENTRAL WEST, SOUTH EAST AND ILLAWARRA**
Headquarters Orange

Region 5: **MURRAY AND RIVERINA**
Headquarters Leeton

ORGANIZATION STRUCTURE—DEPARTMENT OF AGRICULTURE

(Approved to Operate from 1st July, 1981)



Advisory Services Expanded

During the year a thorough review was made of the Department's organization and structure, and services to rural people and rural industries were improved. Changes made as a result of the review are described under the heading "Restructuring of the Department". One of the main objectives of the changes was to expand and upgrade the Department's advisory services. The aims of the advisory services are:

To improve rural productivity and marketing of produce by providing advice on all technical and economic aspects of livestock, crop and horticultural production.

To ensure the provision of high-quality agricultural produce to the consumer by providing advice on all aspects that affect product quality.

To monitor, protect and maintain the scarce agricultural resources of the State by promoting agricultural practices that are consistent with environmental needs.

To achieve these aims, advisory officers are located throughout the State to serve the different primary industries. For example, livestock officers advise on breeding, management and nutrition; dairy livestock officers advise on milk and cream quality as well as hygiene and management in the milking shed; agronomists and fruit officers advise on plant varieties, use of fertilizers, cultural operations, harvesting, and many other technical issues and management problems.

In their work, advisory officers contact a wide variety of people. They have strong links with research workers, both to assist in passing on the latest results and to make research workers aware of industry needs. Advisory officers themselves conduct many field trials to assist in the evaluation of research and its adoption to local requirements, and to monitor environmental changes.

The Department of Agriculture is actively expanding its advisory services. Field days featuring practical demonstrations play an important part in improving the service to farmers.



As well as personal contacts on the farm, by telephone, letter, and in the office; during field days; and in group activities of various sorts; the advisory officer uses a wide range of other methods of communication. These include press, radio, television, newsletters, magazines, bulletins, leaflets, fascimile, teletext and two-way radio.

Regional Advisory Service Activities 1980-81

Farm Visits (Number)	20 556
Field Days (Number)	1 057
Meetings (Number)	1 747
Conferences, Schools, etc.	334
Articles for Agricultural Gazette	21
Articles for Dairy Topics	13
Articles for State-wide journals and magazines	65
Original press articles	2 653
Original radio broadcasts	2 412
Original TV programmes	197
Issues of newsletters	250
Contributions to research/advisory conferences	43
Joint papers with research workers	29
Regional or local bulletins	170
Field Days (Attendance)	75 000
Meetings (Attendance)	50 586
Conferences, Schools, etc. (Attendance)	6 766

In addition to the activities of advisory officers listed above, veterinary officers and veterinary inspectors spent a considerable amount of their time on advisory work. The following is a summary of their advisory activities:

Farm visits	12 032
Press releases	601
Contributions to newsletters	131
Radio broadcasts	106
TV programmes	16
Meetings addressed	482
Field day contributions	110

Increasing Farmer Contact

A major commitment of the advisory services in 1980-81 was to contact more farmers, particularly those who had had no previous contact with the Department. This programme has taken various forms. In the New England Region, advisory officers had as their objective an increase of at least 25 per cent in farmer contacts across the Region. Methods used included publishing a "Directory of Officers", random visits, visiting new farmers, and the distribution of a newsletter. Evaluation of the programme will take place later in 1981.

In the North Coast Region a number of officers implemented programmes aimed at assisting new landholders and part-time farmers many of whom have a limited knowledge of agriculture. The methods used included short courses, farm walks, night meetings and weekend field days. In spite of these efforts, the number of direct inquiries handled at Regional Headquarters remained very high.

Newsletters continued to be important in all regions by providing information to farmers in a more direct and personal fashion than is possible through the mass media. In the Southern Region a new

newsletter was launched to serve landholders in the eastern portion of the Region. It commenced with a monthly circulation of 5 000 copies which are prepared and printed locally.

The co-ordination and decentralization of advisory services with research and veterinary services is helping to make the work of the advisory officer more effective. A start was made to transfer positions to the country so that more officers were available for face-to-face advisory work in the field.

During 1980–81 the Department created 193 new positions by reallocation within the limits of the staff establishment. This process will continue, with the objective of doubling the country advisory services.

Drought

In May, 1979, the drought started in the north west of New South Wales and eventually affected most areas of the State. It peaked in February, 1981, when 47 districts and 5 part districts out of a total 59 Pastures Protection Districts were declared to be drought stricken.

This drought has been the most severe this century in many regions. In the north west, producers experienced their third successive drought year. Drought breaking rains were received in parts of the State by June, 1981, but, even so, the effects of the drought will be felt for a number of years. The cost of the drought has been enormous. In 1980, grain to the value of over \$600 million was lost because of failed crops and low yields. Graziers paid huge bills for drought fodder, transport and agistment, had to drastically reduce their stock numbers, and suffered losses in livestock production.

Drought Relief

Under the Commonwealth/State Natural Disasters Financial Agreement, assistance to primary producers in the form of rail and road freight subsidies, cattle slaughter compensation, free stock and domestic

water, and drought loans, cost \$3.5 million in 1979–80 and \$65 million in 1980–81.

The State lost in excess of \$50 million in rail freight alone because of the reduced wheat crops in 1980. In total, the drought was estimated to have cost all concerned in excess of \$1 billion by the end of 1980.

There has been a vast improvement in the total drought relief package made available to drought-affected primary producers in New South Wales in the last five years.

The maximum carry-on and dairy company fodder loan was \$3,000 in 1975 while the maximum restocking loan was \$10,000. During 1980, the maximum carry on and dairy company fodder loan was increased from \$5,000 to \$10,000, then to \$15,000 and finally to \$20,000 with a second \$20,000 made available during the second year of drought. The maximum restocking loan was raised to \$30,000.

In addition, a scheme was implemented to provide rebates for water cartage with water for stock and domestic purposes provided free.

A cattle slaughter compensation scheme was introduced and was set at \$5.00 a head.

Rail and road freight concessions for stock and fodder movement were raised from 50 per cent to 60 per cent.

Expenditure on drought relief subsidy schemes administered by the Department of Agriculture (road freight subsidies on movement of water, fodder and livestock; provision of free stock and domestic water; and cattle slaughter compensation) amounted to \$22 million, made up as follows:

Livestock Movements	\$6,933,925
Fodder Movements	\$14,883,272
Water Cartage Subsidies	\$177,989
Slaughter Compensation	\$149,921
Drought Relief Leaflet	\$17,822
Total	\$22,162,929

This expenditure complemented rail freight concessions and drought loans of over \$40 million.

1980–81, has been a bad drought year, and there was a significant increase in drought relief funding compared with previous droughts. Reduced prices for wheat for supplementary feeding was part of the aid provided.



The Department was greatly assisted in the processing of claims for drought relief by Veterinary Inspectors, Rangers and other staff of Pastures Protection Boards throughout the drought affected areas.

Wheat for Fodder

Throughout the drought there was a strong demand for wheat for drought feeding of sheep and cattle. As a service to graziers in drought affected areas, the Department of Agriculture through its regional and district offices, processed orders, received payments and issued delivery authorities on behalf of the Australian Wheat Board.

Sales of wheat were made at a special reduction of \$2 per tonne. By the end of June, 1981, 58 486 tonnes were sold in this way and sales were still being made.

Advice to Farmers

Research by the Drought Research Unit at the Veterinary Research Station, Glenfield since the last widespread drought in 1965, provided sound information in advising producers faced with making complex decisions.

The Department was the primary source of information and assistance on drought feeding, feed values, financial options, sources of assistance and animal health.

Drought Relief Booklet

A major initiative was the production in January, 1981, of a special drought relief booklet setting out details of the total drought relief package and assistance available to primary producers.

The Treasury and the Rural Bank co-operated with the Department of Agriculture in producing 125 000 copies of a multi-coloured informative booklet. Distribution to all primary producers was a major task. The Land Newspaper co-operated by including 66 000 as an insert in one of their issues and 25 000 were distributed by the Livestock and Grain Producers' Association.

Extensive publicity and advertisements in the rural press made it known that copies were available through all offices of the Department of Agriculture and branches of the Rural Bank. From the Head Office of the Department, copies were distributed to individuals and organizations with country interests.

Wheat

Only 2.8 million tonnes of wheat was harvested in New South Wales in 1980-81. The yield was less than half the 6 million tonnes harvested in the previous season.

The drought, running into its second year, drastically reduced the area sown in most wheat growing areas. Some crops failed and many crops yielded poorly. Growing conditions were better in the south of the State. Yields were about normal in the eastern Riverina.

Despite the drought the Department's wheat breeding programme produced results. Varieties bred at the Agricultural Research Institute at Wagga and the Agricultural Research Station at Temora dominated sowings in southern New South Wales, were sown in the drought-stricken north of the State, and were also sown in other States.

A promised crossbred from this programme, M2145, is similar to the variety Kite in grain quality and disease resistance. It is in the process of being named and is being prepared for release in 1982. Less advanced lines performed well in trials in 1980.

In the irrigation areas the recently released variety, Avocet, has been well received. Some crops of this variety yielded 7 tonnes per hectare in the 1980 season.

In the northern breeding programme based at the Agricultural Research Centre at Tamworth, work continued with three lines which have shown moderate tolerance to frost at flowering. These lines have been submitted to the Uniform Quality Testing Committee for quality evaluation.

Durum Wheat

Significant markets for Australian Durum wheat have been located overseas and growers are being encouraged to expand production to 100 000 tonnes in 1982.

In the Durum breeding programme at Tamworth an advanced line equal to the best overseas types in grain quality is undergoing final tests prior to its expected release in 1982.

Stripe Rust of Wheat

Two wheat seasons have elapsed since stripe rust, a serious disease overseas, was first recorded in Australia. Biologists at the Biological and Chemical Research Institute at Rydalmere have demonstrated in field and glasshouse tests that many locally grown wheat varieties have intermediate to high resistance to the only strain of stripe rust so far identified in Australia.

A Plant Pathologist from the Biology Branch carried out some collaborative research with the University of Sydney at the Castle Hill Research Station to determine the genetic basis of resistance to the disease so that appropriate genes can be bred into future varieties bred for Australian conditions.

Wheat Variety Identification

Biologists at the Biological and Chemical Research Institute have made progress in identifying wheat varieties using a technique called electrophoresis. This work is of particular relevance to wheat breeders in identifying crossbred lines.

Prime Hard Wheat Baking Quality

Extraction rates now used by flour millers result in retention of bran and wheat germ to give a high fibre flour.

Test bakings in the Plant and Cereal Chemistry Branch at the Biological and Chemical Research Institute found that the small beneficial effects of wheat germ and the small detrimental effects of bran tend to cancel out in terms of baking quality.

Direct Drilling

Wheat farmers, the Department of Agriculture and the Soil Conservation Service have been interested for many years in direct drilling as a means of conserving soil and moisture. Other terms relating to this concept are minimal cultivation, no-till, and conservation farming. Rising fuel costs have highlighted interest in reducing cultivation costs. All wheat growing areas report an increase in sowings by direct drilling. In the southern half of the wheat belt, south and west from Bathurst, for example, 40 000 hectares was direct drilled in 1980-81.

The Department of Agriculture continued to investigate direct drilling techniques. Research officers, advisory officers, agricultural mechanization officers and economists have combined with landholders and commercial firms in a number of projects throughout the wheat belt. Some of the projects jointly involved the Soil Conservation Service and the Department of Agriculture.

Chemists from the Biological and Chemical Research Institute in field trials in the northwest investigated the fate and effect of residues of herbicides atrazine and glyphosate in no till situations. Results indicate that atrazine was more persistent in an alkaline black soil than in an acid brown earth. Significantly, neither herbicide, at rates up to 4.8 kg per hectare, affected the activity of soil micro-organisms.

In the north of the State a comprehensive "No Till" research project has the financial support of the New South Wales Wheat Industry Research Committee to the extent of \$69,100 in 1980-81. Other funds from the same source, amounting to \$158,822 were made available to the Department to support similar projects in other parts of the State.

Results of trials were variable in 1980-81. On the south west slopes and southern tablelands, yields of wheat following direct drilling were equal to or better than yields obtained following conventional cultivation. Not all varieties are adaptable to direct drilling. Because less use is made of residual soil phosphorus, more superphosphate is required to give comparable yields when crops are sown by direct drilling.

In the central west when crops followed pasture, long fallows produced higher yields than short fallows as can be expected because more nitrogen and more stored moisture were available. However, where wheat crops followed stubble, direct drilling gave yields equal to those following conventional cultivation.

Support for Wheat Research

Including the funds allocated to direct drilling research, the Wheat Industry Research Committee of New South Wales granted a total of \$513,552 to the Department in 1980-81 for wheat research. In addition, the Wheat Industry Research Council granted \$257,975 for the same purpose.

Other Cereals

Although wheat yields were cut back most severely by the widespread drought, yields of all other cereal crops in 1980-81 were well below those of the previous year, with consequent serious loss of income to grain producers.

	Total Yield—'000 Tonnes	
	1979-80	1980-81
Wheat	6 000	2 800
Barley	686	485
Oats	460	304
Grain Sorghum	205	120
Maize	50	35
Rice	674	700

Emphasis by the Department of Agriculture on reduced cultivation methods through trials, demonstrations and other publicity, was reflected in its increased acceptance in the more favoured rainfall areas.

The development of a no tillage planter at the Agricultural Research Centre at Tamworth has been a significant achievement. The planter was used to establish wheat, grain sorghum, sunflower and sorghum in heavy stubble.

New Varieties

Plant breeders from the Agricultural Research Institute at Wagga released Malebo, an early, white grained, dual-purpose barley variety with resistance to leaf scald and net blotch. It was bred in South Australia.

One of two promising crossbred oat varieties bred at the Agricultural Research Station, in Temora is being prepared for possible release in 1982.

Following continued successes in field trials in New South Wales and Queensland, maize hybrids bred at the Agricultural Research Station at Grafton are being considered for release.

Rice

Nearly all of Australia's rice is grown in the irrigation areas of southern New South Wales. In 1979-80, a record 670 000 tonnes of paddy rice were produced from 104 000 hectares sown.

The rice breeding programme at the Agricultural Research Centre, Yanco has contributed much to growers profits by developing varieties with improved grain quality. The general aim is to produce high yielding short, medium and long grain varieties with good milling, cooking and processing qualities adapted to New South Wales conditions.

Introduced and locally developed semi-dwarf varieties were evaluated throughout the year. Several of these yielded particularly well especially at high nitrogen rates where they demonstrated resistance to lodging. This evaluation programme is continuing, aimed at the release of improved varieties to the industry as soon as possible.

Whilst it seems that growers will benefit from using semi-dwarfs, the poor vigour of these varieties in the seedling stage may be a serious drawback, especially under aerial sowing and in cold weather.

Funds made available by the IREC/MREC Rice Research Committee have supported the programme particularly in the provision of technical support staff.

Other Field Crops

Areas sown to major field crops, other than cereal crops, in 1980-81, were—

	Hectares
Cotton	62 000
Linseed	2 900
Rapeseed	8 060
Safflower	9 860
Soybean	18 300
Sunflower	36 400
Lupin	21 000

Oilseeds

Total production of oilseeds, excluding cottonseed, fell by about half in 1980-81 mainly through a reduction in dryland sowings due to drought conditions.

Of the oilseed crops, soybeans, which are mainly grown under irrigation, were least affected by



A good crop of safflower, one of the oilseed crops grown in the north-west of the State. Farmer and District Agronomist here discuss harvest prospects.

the drought. Rain grown crops yielded satisfactorily on the north coast, where the area sown has expanded rapidly in recent years.

Cotton

Shortage of irrigation water in the Namoi Valley restricted sowings of cotton but production expanded in the Gwydir Valley, where water was in better supply. Overall production for the State was a record 339 960 bales and 119 000 tonnes of seed for oil extraction and sowing with a total gross value of \$135 million.

Research into cotton production at the Agricultural Research Station, Narrabri, has highlighted the possibilities of a mid-season dressing of nitrogen fertilizer which can increase yields by up to 34 per cent.

Chemists from the Biological and Chemical Research Institute have investigated possible contamination of the environment from the rapid expansion of cotton growing in the Gwydir Valley. The results indicated contamination was below analytical detection limits.

Other studies were conducted at Narrabri on drift of pesticides applied from the air by controlled droplet applicators. Preliminary results show that very little pesticide escapes the target area and the small amount which drifts is quickly trapped by the crop with no pesticides detected beyond 150 metres.

The SIRATAC management system (CSIRO and Department of Agriculture Tactics for Cotton Growing) now involving the University of Queensland and the Department of Primary Industries Queensland met with further success during the year. Chemical

insecticide treatments based on the SIRATAC computer programme were only about half those used in commercial practice and yields and fibre quality were comparable. If all growers used SIRATAC the total spray cost to the industry might be reduced from around \$10 million to \$6 million in a season.

Rapeseed Varieties

Plant breeders at the Agricultural Research Institute, Wagga increased supplies of a new variety of rapeseed which has much better oil and meal quality and blackleg disease resistance than the current variety Span. It is expected that the new variety will be released in 1982.

Soybean Research

At the Agricultural Research Station at Narrabri good progress was made towards developing higher yielding varieties of soybeans for production under irrigation. Experimental lines were tested in 1980-81 in southern irrigation areas where they yielded 50 per cent more than Bethel, currently the most widely grown variety. A new variety, Ransom, was released for the 1980-81 season on the north coast.

Direct Drilling

Research into direct drilling of dryland soybeans at the Agricultural Research Centre at Tamworth resulted in direct drilled crops yielding 66 per cent above those sown on cultivated fallow land.

In other research at the Agricultural Research Institute at Wagga, direct drilled lupins sown into wheat stubble yielded almost twice as much as those grown conventionally.



Guayule, a new crop in Australia with potential for production of natural rubber. The Department's research on this crop is centred at Condobolin Research Station, and 10 trial plots have been established elsewhere in the State.

New Crop—Guayule

Guayule has potential as a producer of natural rubber. It is a grey-green perennial shrub, not unlike some finer-leaved saltbushes in appearance. It produces rubber in amounts up to 20 per cent of the weight of the plant.

The increasing demand for natural rubber for radial tyres and heavy duty purposes, associated with an expected shortfall of *Hevea brasiliensis* rubber, and United States defence needs has created widespread international interest in guayule. It was grown successfully in the United States under the Emergency Rubber Program during World War II.

Following discussions between the Premier of New South Wales and the Governor of California, and related investigations by the Department of Agriculture, provision was made for this Department to undertake agronomic research on this interesting new crop. The research now underway will provide information on the feasibility of establishing commercial guayule plantations in New South Wales. This research based at the Agricultural Research and Advisory Station at Condobolin, will take two to three years. Ten experimental plots have been established in inland areas.

Tea

Following a successful commercial tea production venture by a local farmer at Clothier's Creek in the Tweed Valley, small plots were established elsewhere on the north coast.

These plots will enable assessment of the potential of a wider area for commercial tea production. The District Agronomist at Lismore and research agronomists from the Agricultural Research Centre at Wollongbar are jointly conducting the investigation.

Pastures

Pasture growth was at such a low ebb during the greater part of 1980–81, the second successive drought year, that thousands of head of cattle and sheep were the subject of forced sale. Thousands of others were moved out on agistment, or were hand fed. By the end of the year hay and silage reserves on farms were generally exhausted and stock water was in very short supply on many properties.

The whole State was affected at some time by drought in 1980–81, and at particular times 47 out of the 59 Pastures Protection Board Districts were declared drought stricken. Suitable agistment was therefore hard to find and large numbers of stock were transferred to Queensland and Victoria.

Superphosphate Topdressing

In recent years and despite the severity of the drought, there has been an increase in the area of pastures top dressed with fertilizers. From a low point of 1.4 million hectares in 1975–76, following the slump in livestock prices, 3.7 million hectares was top dressed in 1980–81.

On the central tablelands, demonstrations conducted by district agronomists and livestock officers in co-operation with Australian Fertilizers Limited were continued despite severe stress caused by the drought. The demonstrations were part of a programme known as "Supersense" and involved application of superphosphate under controlled conditions on local properties.

Results showed that even under the drought conditions topdressing with superphosphate increased pasture growth, improved livestock health, increased body weight and improved lambing percentages.



Harvesting lucerne in the Hunter Valley. New varieties, resistant to pests and diseases, have restored confidence in the lucerne industry following severe aphid attacks several years ago.

Disease and Pest Resistant Pasture Legumes

The Department stepped up its research and evaluation of lucerne and medic varieties to counter the sudden and serious plagues of spotted alfalfa rootrot, has resistance to stem nematode and bacterial wilt, thus adding greatly to its usefulness and productivity. Work is continuing on introducing resistance in lucerne varieties to blue green aphid, pea aphid, and colletotrichum crown rot.

Plant breeders at the Agricultural Research Centre, Yanco, have had considerable success in breeding pest and disease resistance into lucerne.

The variety Nova, which has already shown resistance to spotted alfalfa aphid and phytophthora rootrot, has resistance to stem nematode and bacterial wilt, thus adding greatly to its usefulness and productivity. Work is continuing on introducing resistance in lucerne varieties to blue green aphid, pea aphid, and colletotrichum crown rot.

A comprehensive medic evaluation programme is established at the Agricultural Research Station, Tamworth. This medic programme is in close liaison with the Department of Agriculture of South Australia. There are advanced lines of barrel medic in the breeding programme with better aphid resistance than the present varieties, Jemalong and Cyprus.

Advisory officers in lucerne growing areas of the State were able to recommend particular varieties based on extensive field demonstrations involving a large number of varieties, many introduced from the United States. Despite the drought, increasing sowings of resistant varieties recommended by the Department were made in all the major lucerne growing areas of New South Wales.

Native Grasses

Some native grasses proved their worth during the prolonged drought. In the northern tablelands, in particular, native grasses were highly productive during the summer season.

In response to an increased demand by graziers for more information, the Department is doing research,

with the Agricultural Research Centre at Tamworth as base. Results from experimental plots indicate that, through proper management, the productive wallaby grass can be increased and the undesirable wire grass decreased as components of native pastures.

Weeds

Research and field observations by weeds research and advisory staff have emphasized the value of minimum tillage techniques under severe drought conditions such as those of 1980-81.

Several new herbicides were tested and demonstrated in field crops and pastures by the Weed Research and Demonstration Unit, Orange. The work assisted in the registration of these chemicals and helped the advisory work of district agronomists.

Significant cost savings in the use of a rope wick herbicide applicator for the control of silverleaf nightshade were demonstrated in weed research at Wagga. Rates used were a fraction of those recommended for conventional spraying.

A model was developed which was successfully used to simulate the spread of serrated tussock. It has a useful level of accuracy and is being used to evaluate control strategies.

Water hyacinth control in the Gingham Watercourse near Moree was outstanding due mainly to the activities of the New South Wales Inter-departmental Project Team and the Moree Plains Shire Council which carried out the work. Control was made easier because water levels were very low due to drought conditions.

The Department continued to co-operate with CSIRO in testing biological control agents for the control of weeds such as alligator weed, common heliotrope, water hyacinth, and paterson's curse.



Releasing predators to control insect pests in lucerne, part of the increasing emphasis on biological methods to control insect pests and weeds.

Horticultural Crops

Citrus

Production of citrus in 1980–81 totalled 249 966 tonnes, which was 13 per cent more than the previous crop. The total area under citrus trees was 12 238 hectares, a slight increase (176 hectares) despite further declines in coastal districts.

Increased minimum Fruit Industry Sugar Concession Committee prices paid for most processing fruit, and a strong demand for Valencia oranges, has stabilized the industry and led to significant new plantings continuing in the Murrumbidgee Irrigation Areas. However, Washington Navel oranges, grapefruit and lemons were difficult to dispose of economically either as fresh fruit or to processors.

In a year dominated by drought, research work at the Horticultural Research Station at Dareton showed that undertree weekly watering of mature Valencia orange trees with micro sprinklers increased some yields by up to 100 per cent. It also reduced water usage by 20 per cent compared with trees irrigated by drag-hose sprinklers operated at fortnightly intervals.

At the Agricultural Research Centre at Yanco, higher density planting (up to 5 000 trees per hectare) gave increased early production from close-planted, dwarfing inoculated Valencia trees. Individual tree yields at the higher densities declined but cumulative yields were much higher than in conventional plantings. Fruit quality was not affected by dwarfing inoculations.

Citrus Pest Research

Professor J. McMurtry of the University of California and Dr Huang Ming Dau of the Guangdong Entomological Institute, Guangzhou, China, started a co-operative project with entomologists at the Biological and Chemical Research Institute and the Horticultural Research Station, Gosford, in June, 1981.

The project mainly concerned the biological control of citrus red scale and citrus red mite. The information obtained should assist the New South Wales citrus industry in reducing pesticide usage, particularly for the control of citrus red scale.

Grapes

The vintage of 132 246 tonnes crushed for wine was similar in size to the vintage of the previous year. Drought in the Hunter Valley for the second successive year caused a reduction in grapes crushed from 23 415 tonnes in 1978–79 to 14 438 tonnes in 1979–80 and 10 988 tonnes in 1980–81.

Hot weather in most areas caused a rapid fall in acidity in wine grapes, making it difficult to achieve good sugar/acid ratios.

Red wine as a proportion of the total vintage in the Hunter Valley showed a further dramatic fall, to 21 per cent in 1980–81 from 41 per cent in 1979–80 and 62 per cent in 1975–76.

High temperatures and preharvest rain damage reduced yields of sultanas, gordos and currants in the lower Murray.

High yielding clones of the more important grape varieties of the world are being evaluated at the Viticultural Research Station at Griffith and at the Horticultural Research Station at Dareton. Two heat treated clones of Chardonnay from the University of California gave outstanding yields over several years and will now be established as a mother vine source. Similarly the Swiss clone of Pinot Noir, known as Mariafeld, is being multiplied for distribution to growers. Yields of some varieties have been increased by the use of nematode resistant root stocks.

Grape Vine Symptoms and Fluoride Toxicity

Some nutrient disorders in grape vines can cause leaf burn symptoms which may be confused with damage caused by gaseous fluoride emission from aluminium smelters, power stations and brick kilns.



Fluoride levels in grapevines in the Hunter Valley are regularly monitored by the Department of Agriculture as industrial development impinges on traditional agricultural areas.

Chemists from the Biological and Chemical Research Institute identified severe leaf burn in grapevine leaves from two vineyards in the Hunter Valley as being caused by very high levels of salt and low levels of potassium. When the samples were analysed by the State Pollution Control Commission low levels of fluoride were found, confirming that the injury was a nutritional disorder and not a pollution injury.

Pome Fruits

With the exception of the Batlow district and the Murrumbidgee Irrigation Areas, the drought reduced the average size of apples and adversely affected the health of many trees, particularly in the New England district.

The 1981 apple harvest of 108 000 tonnes is almost 50 per cent greater than last year due mainly to it coinciding with the "on year" of the biennial bearing cycle, and partly due to an upward trend in production. The pear crop estimated at 15 000 tonnes in 1980-81 is the same as last season's estimated crop yield.

Collaborative research by this Department, CSIRO, and the University of New South Wales resulted in the discovery of a new chemical, phorone, for the control of superficial scald of cool-stored apples.

Codling Moth Research

A world authority on insect pheromones, Dr H. F. Madsen of British Columbia, Canada, completed a year of research at the Agricultural Research and Veterinary Centre at Orange in May, 1981.

The research has already shown how spray programmes can be adjusted and rationalized. The work was part of a current highly successful project involving the release into apple orchards of predatory mites originally introduced from the United States.

Other Fruits

Total plantings of stone, berry and miscellaneous fruits declined from 6 530 hectares to 6 451 in 1981.

The area planted to bananas remains stable at 6 931 hectares. Other tropical fruits showed dramatic increases in 1980-81 over the previous year. Macadamias increased by 409 hectares to 1 992 hectares, avocados by 186 to 792 hectares, custard apples by 38 to 84 hectares, guavas by 48 to 206 hectares and litchis by 19 to 73 hectares.

Yields of stone fruits were higher in 1980-81 than in the previous year. The canning apricot crop of 4 800 tonnes was double that of the previous year. Dessert peach and nectarine crops were up 57 per cent and 25 per cent respectively and extensive new plantings were made in coastal districts. The canning peach crop yield was 14 400 tonnes, 15 per cent above the previous year and a few new plantings in the Murrumbidgee Irrigation Area were made. Many crops were mechanically harvested.

Prune and cherry crops yielded slightly more than they did in 1979-80.

A system of training and trellising, developed in the Murrumbidgee Irrigation Area resulted in higher yields of canning peaches.

A new development in the avocado industry was an industry-funded tree accreditation scheme through which growers can be assured of purchasing disease free plants from nurseries.



A machine for harvesting soft fruit is put through its paces at Young by a Department of Agriculture mechanization officer. Increasing costs, and difficulty of recruiting of experienced hand harvesters, make such machines of prime importance to the fruit industry.

The scheme was made possible through the development by the Department of a rapid biochemical test for avocado sunblotch virus. This scheme, coupled with the success of Departmental recommendations on site selection and cultural practices, has brought greater stability to the industry.

Banana weevil borer is still the major pest in banana growing areas. The control programme operated by the Banana Growers' Federation Co-operative for the past 15 years was discontinued because of increasing costs. Under the provisions of the Plant Diseases Act, the onus for control is now on individual growers.

Fruit Fly

Drought over most of the State kept fly populations down. An exception was in Albury where a serious situation developed during summer. An outbreak also occurred involving six farms in the Murrumbidgee Irrigation Area quarantine area. The farms were treated and a carry-over of fruit fly to next season is not expected.

The demand for information on new fruit crops has been particularly heavy on the north coast. The Advisory Services of the Department responded by arranging evening courses in association with the Department of Technical and Further Education. In addition, short schools, bulletins, newsletters, farm walks and field days were used as the need arose.

In the major horticultural areas of the southwest of the State, the Advisory Services conducted a programme aimed at increasing the efficiency of irrigation of fruit and vegetable crops. A series of cartoon style episodes on television and radio were prepared by regional and district staff to illustrate the principles and practices of modern irrigation.

Vegetables

The vegetable industry, heavily dependent upon water for irrigation, with producers scattered throughout the State, was severely affected by the widespread drought.

Potato crops at Guyra were abandoned or dug for seed, high salt levels in the Hunter River caused damage to lettuce, cucurbit and cole crops, and high temperatures in the irrigation areas caused crop losses. Redeeming features of the drought were a reduction in fungus disease where water was available, and high prices for those producers fortunate enough to harvest crops when supplies were short.

New Varieties

Plant breeders, research horticulturists and district advisers continued their development and evaluation of many new vegetable varieties. On the North Coast the Dutch hybrid tomato, Precodor, provided better quality fruit and similar yield when compared with the standard winter variety Rouge de Marmande.

In field trials at Cowra and Young, a new variety of processing tomato yielded well under machine harvesting production conditions. Other field trials—of potatoes, sweet potatoes and onions—were established in appropriate districts.

Pesticide Residues in Vegetables

Residue problems associated with the use of organochlorine pesticides to control soil insect pests in maize and potatoes led chemists at the Biological and Chemical Research Institute to evaluate alternative treatments. Several organophosphates are currently under test.

Beef Cattle

Beef cattle numbers in New South Wales fell by 13 per cent in 1980–81 to 5.2 million. The severity of the widespread drought brought about the sharp decline in numbers. There were forced sales and high death rates of both mature and young stock in the worst affected areas, and reproduction rates fell. Large numbers of cattle were moved on agistment to Queensland and Victoria, where many were sold.

Drought Relief

Beef producers' income losses were increased by the high cost of hand feeding. It is difficult to tell how much drought relief money was spent on the cattle industry and how much was spent on the sheep industry, but a total of \$22 million was distributed by the Department of Agriculture on behalf of the Government of New South Wales. It was used to subsidize movement of water, fodder and livestock, to provide free stock and domestic water and to compensate producers for cattle slaughtered. This complemented rural freight concessions and drought loans of \$40 million.

The decline in cattle numbers has had a serious effect on the viability of abattoirs. Despite forced sale of cattle for slaughter, the meat industry was depressed and by the end of June, 1981, six abattoirs had closed.

Advice to Producers

Individual advisory officers were heavily involved in giving advice to producers, in organizing publication



Crossbred cattle at the Grafton Agricultural Research Station. Largely as a result of Departmental trials, crossbreds are now more widely accepted by producers and the meat trade.

of information, and arranging group activities throughout the year, especially in the drought affected districts.

Co-ordinated information campaigns by advisory officers, veterinarians and economists were well received by producers. In the South Eastern and Illawarra region for example, 40 drought seminars were attended by 2 400 producers.

In all regions group activities were supplemented by up-to-date information in the form of bulletins, regional publications, press statements, newsletters, radio talks and TV programmes.

Live Cattle Futures

Trading in live cattle futures is open to producers and can be used to their advantage. It is a departure from conventional selling methods. To help producers understand the complexities of futures trading, advisory staff from the Tamworth and Gunnedah offices of the Department developed the "Live Cattle Futures Game".

The game has proved to be very successful in assisting producers, agents and bank managers by simulating futures trading. The officers who developed the game conducted two in-service workshops for Department of Agriculture officers in New South Wales and a workshop in Sydney for representatives of State and national agricultural firms. They were invited inter-State where they conducted workshops in Brisbane, Melbourne and Adelaide for departmental officers and brokers' agents. Extensive use of the game was made by the Agricultural Business Research Institute of the University of New England.

Crossbreeding

Beef cattle breeding programmes are essentially long term. Cattle breeding research commenced at the Agricultural Research and Advisory Station, Grafton in the early 1970's and has produced results of value to the beef industry on the North Coast. In particular, Brahman-British breed crosses gave higher weight gains than pure British breeds.

Livestock Officers report that because of spectacular results from growing out trials involving first and second cross steers, crossbreeding has now been accepted by producers and the meat trade.

Sheep

Sheep numbers declined by 7.2 per cent in 1980-81 to 45.1 million, the smallest sheep population since 1947.

Wool production was down by 6 per cent in total to 197 000 tonnes but despite drought conditions production per head was much the same as in the previous year and prices remained buoyant.

Producers were largely preoccupied with drought management during 1980-81. Although reduced numbers lessened pressure on pastures, production costs rose, as most producers resorted to hand feeding and agistment. Stock losses were less than in previous droughts because of the economic incentive for hand feeding.

Lessons learned from previous droughts, increased levels of assistance, stable prices and a comprehensive advisory service offered by the

Department all helped to inject into the industry a high level of stability and confidence.

Objective Measurement

Advisory officers throughout the State encouraged Merino sheep breeders to use objective measurement to select breeding stock. The New South Wales Sheep Breeders' Association gave the programme a high level of support. Twenty-five Field Days held across the State were well attended.

There was a 37 per cent increase in demand by sheep breeders for the Fleece Measurement Service conducted from the Agricultural Research Station at Trangie. It provides basic measurements on stud rams free of charge. During 1980-81, 41 300 samples from rams in 131 Merino studs were tested. Provincial ram auction sales now include fleece measurement details in sale catalogues to assist buyers with the selection of better breeding stock. At the 1981 Goulburn and Dubbo ram sales 60 per cent of the studs provided objective measurement data for use by prospective ram buyers.

A sire testing service for meat sheep ram breeders was commenced during the year.

Fly Strike Control

A portable display of mulesing techniques using live sheep was well received when exhibited by officers. Part of the total grant of \$284,945 made to the Department in 1980-81 by the Wool Research Trust Fund was used to provide duplicate displays which will be used in other States.

Merino breeders experimenting with rams of different strains to those they'd previously used achieved some striking improvements—more and better wool, and improved lamb rearing. The "experiment and improve" theme was highlighted at a field day staged at Tullamore.

Veterinary research into fleece-rot and fly strike found that degradation of organophosphorus insecticides was caused by bacteria isolated from fleece-rot lesions. This has important implications in the use of organophosphorus insecticides for fly strike control as a reduction of up to 30 per cent in the insecticide concentration was recorded.

Ovine Accredited Brucellosis Free Flock Scheme

The scheme was launched in January, 1981, following approaches by the Australian Society of Producers of British Sheep and the Poll Dorset Society. It represents a departure from previous accreditation schemes, which were sponsored by the Department. Whilst veterinary practitioners and industry have the responsibility of making the scheme work, the role of the Department remains vital in overseeing the scheme and being responsible for issuing the accreditation certificates and maintaining the list of accredited flocks and approved practitioners. By 30th June, 1981, 42 flocks were fully accredited and many more were in the process of accreditation.

Ram Libido

Improvement in lambing percentages are possible through selecting rams with high libido or serving ability. Research work at the Agricultural Research Station at Trangie found that there are large and measurable differences in the serving ability of rams. There are indications that female progeny of rams with high libido tend to produce and rear more lambs.



Merino Breeding Research

Thirteen pure lines of merino sheep from recognized strains and studs are being run as one flock in a long term breeding project at Trangie. Under identical management conditions it has been established that there are large differences in wool production, growth rate and size, fleece rot resistance, susceptibility to fly strike, and lambing performance between blood lines. This has important implications in the selection of breeding stock in commercial flocks.

Footrot

During 1980 an economic evaluation of the New England Protected Area (Footrot) Programme was conducted by the Department of Economics, University of New England. The Programme has been in operation since 1961 and includes all sheep raising areas of north eastern New South Wales. At the end of the year only one of the 4 000 flocks in the area was in quarantine.

Benefit to the community over the past 20 years was estimated by the study group to be between \$12 million and \$41 million. They project similar benefits for the next 20 years.

Dairying

The number of dairy farms fell by 9.6 per cent during 1980–81, to 3 256. The fall in the number of farms and the drought contributed to a decline in the volume of milk produced by 7 per cent to 844 million litres compared to the previous year.

Manufactured milk continued to be in short supply with production down by 23 per cent on last year.

The Department of Agriculture assumed full responsibility under the Dairy Industry Marketing Authority Act for supervision of dairies and milk quality on farms. Livestock Officers (Dairying) now carry out advisory and regulatory functions and offer a comprehensive service to the dairy farmers of New South Wales.

The Dairy Industry Marketing Authority, on which the Department of Agriculture is represented, was established on 1st July, 1980, to administer all industrial matters between the farm milk vat and the consumer.

Service to dairy farmers by the Department was extended when it took over the administration of the former Dairy Industry Authority's Artificial Stock Breeding Service at Berry, thus bringing under one management structure artificial breeding and herd recording services.

A new computerized system of processing dairy herd records introduced in 1980–81 improved the flow of herd data to producers, advisory officers and research officers. A record 30 per cent of dairy farmers now record performances of individual cows.

Dairy Industry Research

The Dairy Research Committee made a grant of \$40,410 in 1980–81 to assist the Department's dairy industry research programme.

Following an intensive internal review in 1979 by research and advisory staff, all dairy cattle nutrition research for the dairy industry across the State was

concentrated at the Agricultural Research Centre, Wollongbar. A team of research and advisory workers supervises the programme, publishes a dairy nutrition newsletter, and organizes seminars.

The main emphasis in 1980–81 was a project which considered the relevance of feeding various energy/protein rations to early lactating cows grazing on topdressed kikuyu pasture. Despite the high quality of the pasture in the trials, it was shown that the feeding of high energy diets increased milk production by 48 per cent (5.6 litres per day) and that high energy diets and "by-pass" protein increased milk production by 72 per cent (8.5 litres per day).

In a second set of experiments, which confirmed the initial results, the addition of sodium bicarbonate as a buffer in high concentrate diets improved the butterfat content of milk by 0.13 per cent.

Other work of a State-wide significance to the dairy industry concerned assessment of ryegrass varieties, and the development of a computer model from research data accumulated from previous projects.

At the Dairy Research Centre at Richmond, projects were conducted on dairy hygiene, quality of dairy products, and the effect of stress on milk production. The scope of the Centre was expanded to include hygiene studies in the meat, fish and poultry industries.

The hormone cortisol was used as an indicator of chronic stress in an experiment that established that cows highly conditioned to sound, light and feed while being milked produce more milk than those that are only poorly conditioned.

Economic and safe production of cultured dairy produce was demonstrated. The project proved that certain strains of starter cultures slow down the growth of some spoilage bacteria during manufacture of cultured dairy products.

A survey was conducted by the Dairy Research Centre on cleaning practices in the meat industry to aid the Standards Association of Australia in developing standards of cleaning in that industry.

Mastitis Advisory Service

Dairy farmers in the State were provided with a monthly bulk milk cell count (BMCC). This information gives an objective measure of mastitis at the herd level and is summarized at a factory, district and State level. The Department's target figure is less than 300 000 cells/ml in samples tested. The Service has been responsible for reductions in BMCC from 620 000 cells/ml in 1975–76 to 469 000 cells/ml in 1980–81. The proportion of farms with cell counts less than 250 000 has increased from 5 per cent to 17 per cent. An automatic cell counter purchased with assistance from the Dairy Industry Marketing Authority and installed at the Veterinary Research Station, Glenfield improves the service to dairy farmers.

A State-wide BMCC competition was again conducted by the Department in conjunction with a commercial firm and the New South Wales branch of the Australian Dairy Institute.

Pigs

Oversupply of pig meat in 1980–81 caused substantially lower prices for pork and bacon pigs. Larger piggeries continued in production and absorbed the lower returns but many smaller scale piggeries closed.

The number of sows in New South Wales increased from 101 000 to 125 000 in 1980–81. Over the same period the total number of sows in Australia increased by 44 000 to 352 000.

The increase in sow numbers was due to an increase in the size of larger piggeries. Plans drawn up during the year for a number of large intensive units of up to 500 sows indicates that further expansion of the industry will take place.

Research

The Australian Pig Industry Research Committee contributed \$47,378 to the research programmes of the Department centred at the Agricultural Research Centre, Wollongbar. The research was on the relationship between the energy to lysine ratio in prepared rations, and the growth and carcass composition of different weights and sexes of pigs.

This project has relevance to the sale of pigs by classification, and progress was made in relating level of feed to prime carcass quality. Use was made of ultrasonic techniques and ruler probes as predictors of back fat thickness. In another project, the effect of energy on growth rate and body fat thickness was considered.

Sale by classification

Advisory staff promoted the system of sale by classification now in operation from the Homebush markets. The system involves the auction of pigs, sight unseen, and later classification of the carcass. The procedures already in operation in South Australia were considered by a group of departmental officers, producers and livestock agents prior to the Livestock Marketing Study Group (Pigs) being set up in New South Wales.

Performance Testing

Other programmes by advisory staff included performance testing of boars and sows which lifted the quality of breeding stock replacement for commercial producers.

Honey Industry

The drought caused a reduction in honey flow, and beekeepers had to meet the costs of transporting hives over long distances. Further, profitability declined due to depressed honey prices on world markets. Domestic prices also were down, due to an excellent season for honey production in Queensland and Victoria.

In 1980–81, honey production in New South Wales was 5 000 tonnes compared with the very high level of 9 935 tonnes the previous year and a normal level of about 7 000 tonnes.

During the year there was a dramatic increase in the incidence of American foulbrood disease. In southern New South Wales 757 hives were affected compared with 74 in the previous year. European foulbrood is now endemic in the southern parts of the State and is spreading northwards posing serious problems to the industry. Compensation paid to beekeepers for bee diseases amounted to \$34,823 in 1980–81, an increase of \$20,623 over the previous year. The Honey Research Committee contributed \$2,400 to the Department for research projects.

Research on European foulbrood led to effective diagnostic methods and the use of antibiotics to control the infection in hives. A feature of the advisory work during the year was a series of field

days across the State involving four livestock officers. The theme of the field days was queen bee rearing. A total of 400 beekeepers attended the field days.

Poultry

Egg Production

Despite a decline of 4.3 per cent in the number of egg producers in 1980–81, bringing the total down to 668, there was a surplus of 17 per cent in the quantity of eggs needed to supply the local market in New South Wales.

High equalization costs applied to cover the loss of exporting surplus eggs decreased returns to producers, and the price of hen quotas fell from \$15 per hen to \$10 per hen at the end of June, 1981. Changes in the Victorian hen quota legislation designed to phase out quotas in that State over the next three years also depressed the value of local hen quotas.

The Minister for Agriculture established a two man Committee of Inquiry in April, 1981, to review and make recommendations on the production and marketing of eggs in New South Wales.

Poultry Meat

Poultry meat production was at a high level in 1980–81 but declined later in the year. The total number of chickens processed in 1980–81 was 98 million, an increase of 18 per cent on the previous year, and represents 44 per cent of the total Australian production.

There was severe price competition between processors. Some small processors were forced to close and others were taken over by larger companies. Control of the broiler industry is now concentrated to the extent that 80 per cent of production comes from three major companies.

Poultry Research

Funds totalling \$28,527 granted by the Poultry Research Advisory Committee and \$21,610 from the Australian Chicken Meat Research Committee were utilized in projects at the Poultry Research Station at Seven Hills.

Genetics research resulted in development of a new model of heterosis which explores the lack of hybrid vigour frequently found in the progeny of crossbred parents. This work has implications for crossbreeding programmes, not only for poultry but for those involving pigs, sheep and cattle.

Japanese quail were used to investigate the physiological mechanism of fat deposition. An instrument developed at Seven Hills to measure the thickness of abdominal fat in live birds is now being used by commercial breeders to select leaner, faster growing, and more efficient meat chickens.

Another project compared the conventional diet with one where the cereals were not ground. Birds on the non-ground diet ate more feed, and they laid more large eggs. These results, if adopted commercially, could result in considerable energy savings in the preparation of rations for laying hens.

Farm Management Record Study

Seventy egg laying flocks were recorded under the Farm Management Record Study developed at the Poultry Research Station at Seven Hills. The programme, based on computer analysis of production

records, has proved so successful that the Poultry Industry Research Committee provided funds for it to be expanded to other States, where there are now 30 flocks taking part in the study. These records play a significant role in improving productivity of layers and provide guidelines for advisory and research programmes.

Random Sample Layer Testing

All the major commercial strains of laying hens in Australia were tested over a production period of 14 months at Seven Hills Poultry Research Station.

The tests evaluated the performance of the various strains under uniform management conditions. This provided producers with a buying guide and allowed breeders to assess the performance of their stock relative to competitors.

Animal Health

Responsibility for ensuring the health and related productivity of the important species of livestock, and for controlling scheduled diseases, rests with the Division of Animal Health.

Disease prevention and control involved not only the resources of the Division but co-ordination with other State Departments and private bodies too. During the year, veterinary assistance totalling 234 services was provided to livestock on properties administered by other State Government Departments and Authorities. The principal Acts administered by the Division are: The Stock Diseases Act 1923; Stock Foods and Medicines Act 1940; Stock (Chemical Residues) Act 1978; Meat Industry Act 1978; Cattle Compensation Act 1951; Swine Compensation Act 1928; Poultry Processing Act 1969; and the Veterinary Surgeons Act, 1923.

On behalf of the Commonwealth of Australia the Division administered the section of the Quarantine Act relating to the importing and exporting of animals and the importing of animal products. For details of this work see Appendix II.

The Division also supervised the 38 veterinary inspectors employed by Pastures Protection Boards throughout the State.

Animal Health Diagnostic Service

The opening of the new veterinary laboratory at Orange saw the completion of long term plans to provide a diagnostic service across the State to safeguard the animal industries. There are now regional laboratories at Armidale, Glenfield, Orange, Wagga Wagga and Wollongbar; and a Central Veterinary Laboratory at Glenfield.

In 1980-81 a total of 15 403 specimens were consigned to the Regional Laboratories for testing, and 6 938 of them were sent to the Central Veterinary Laboratory at Glenfield for specialist examination. Details of this service are contained in Appendix I.

Brucellosis Eradication Campaign

All areas of New South Wales were actively involved in the campaign to eradicate brucellosis. The Provisionally Free Area was extended in August, 1980, and March, 1981, by the inclusion of a further 20 Pastures Protection Board Districts and now contains 75 per cent of the State's cattle herds. After March, 1981, there were no Residual Areas, as all of these achieved Control Area status.



Belinda McMillan (left) and Sue Harrison checking cattle tests for brucellosis on a property in the Orange district. The girls are one of the brucellosis blood testing teams working from the Agricultural Research and Veterinary Centre at Orange.

The prevalence of brucellosis dropped significantly in 1981. Progress over the last five years, as recorded on the Australian National Animal Disease Information Service (ANADIS) computer, is shown below:

Brucellosis Prevalence in New South Wales
June 1976-1981

Date: (June)	1976	1977	1978	1979	1980	1981
Herd Prevalence (per cent).	29.05	29.5	10.1	9.75	4.78	1.31
Cattle Prevalence (per cent)	3.1	3.1	1.3	0.21	0.17	0.06
Number of Known Infected Herds	8 881	8 983	6 949	3 446	2 081	644

Details of progress in herd status and regulatory activity are summarized in Appendix II and details of serum sample testing over the past six years are contained in Appendix I.

Field testing of almost 2.5 million cattle involved almost 34 000 property visits and the testing of over 20 000 herds.

Drought hampered eradication activity as many cattle owners were unable to muster and hold their herds for testing. Drought agistment increased the workload for brucellosis staff in several areas as it meant there were more cattle requiring movement tests. The movement controls were effective in preventing major breakdowns in the Provisionally Free Area.

Extensive advisory work throughout the State supported the brucellosis eradication campaign. Emphasis was on keeping disease-free herds "clean", rather than on ridding infected herds of brucellosis.

Cattle owners and the industry were kept informed of progress, largely through farmer newsletters. Posters were distributed advising cattle owners to check brucellosis status before buying cattle.

The changing brucellosis status of different areas required changes in stock movement restrictions. Advisory material was continually updated and widely distributed. The response was excellent. Four high-quality display boards were shown at about ten shows and field days. These were in such demand that smaller copies were made.

Tuberculosis Eradication Campaign

There was further significant progress in the eradication of Tuberculosis (TB) with only 14 herds remaining in quarantine at 30th June, 1981, compared with 20 in June, 1980, and 62 in June, 1979. The herd prevalence dropped from 0.028 per cent to 0.021 per cent and the cattle prevalence dropped from 0.0005 per cent to 0.00017 per cent.

The continued decline in abattoir detections of tuberculosis is very encouraging in view of the large turn off of cattle in the drought. Of the twenty-three cattle with tuberculosis lesions detected at slaughter, twenty-two were successfully traced back to their herds of origin. Eradication testing was carried out on 16 723 cattle in 77 herds of which 34 herds were considered to be infected.

In view of the large reservoir of tuberculosis in the north of Australia, New South Wales has progressed very well in its eradication campaign. Two small outbreaks in the north eastern corner of the State caused concern after abattoir tracebacks identified these pockets of infection. Both were contained by routine testing procedures.

Cattle Tick and Tick Fever Control

Control of cattle tick within the infested area of northeastern New South Wales is the responsibility of the Board of Tick Control, under the jurisdiction of the Department of Agriculture.

The Board's control programme protects stock on the coast and nearby ranges and prevents cattle tick spreading to the rest of New South Wales.

During 1980-81, the programme was reviewed by the Department, through the Cattle Tick Review Committee, and the need for tick control was reaffirmed. The Committee also recommended a progressive release policy. Other recommendations related to training, upgrading of positions, and salary reviews for the staff; appointment of a staff member to the Board, and introduction of a 40 hour week for employees.

Recommendations already implemented include: Removal of control and anti-tick treatments of nursery plants entering New South Wales from Queensland and the tick quarantine area of New South Wales; areas under policy dipping have been reduced and examination programmes substituted.

Cattle ticks were detected on 43 properties in 1980-81 and on one holding tick fever was found. This compares with 30 infestations and one holding with tick fever in 1979-80. The increase was not unexpected because the policy dipping programme was reduced and more areas were placed on the examination programme as recommended by the Review Committee. In all, 435 000 cattle were in the examination area. Control was maintained on the introduction of livestock and some animal and plant products into the Tick Quarantine Area.

Child-proofing of cattle dips throughout the Tick Quarantine Area was completed during the year. Research on the breakdown of promacyl used in some dips resulted in workable control measures being developed.

Hydatid Control

Hydatidosis is a serious disease of man and animals. It is estimated that over \$650,000 is lost annually in New South Wales through condemnation of sheep and cattle livers at slaughter. Departmental veterinarians in a number of districts were active in 1980-81 in advising the community on the dangers

of hydatid disease, and methods of control. Affected properties were identified by tracing infected animals slaughtered at abattoirs.

Veterinary staff were involved in educational sessions for district nurses. Audio-visual aids were developed for the use of health educators and others interested in the problem. This project followed a study of farmer attitudes to hydatid disease.

In one pilot control scheme, developed through the Goulburn and District Hydatid Eradication Committee, affected properties were visited by community health nurses to advise the owners on control and methods of checking their own health status.

Educational programmes were a major factor in the decline in the level of hydatid disease in sheep and cattle slaughtered at Goulburn City Abattoir.

A Veterinary Officer was seconded during the year to the New South Wales Science and Technology Council where he assisted in preparing a report entitled "Reduction of Hydatid Disease in New South Wales".

Carcase Classification

Abattoirs in New South Wales continued with carcase classification trials co-ordinated nationally by the National Carcase Classification Supervisory Committee, on which the Department of Agriculture is represented. The trials examined the feasibility of operating classification systems for beef, sheep and pig carcasses.

During the year, trials were held at Blayney, Casino, Gunnedah, Homebush and Wagga in which all cattle processed on the slaughter chain were measured. Of three trials initially in operation at privately owned works, two were terminated as little use was made of the classification measurement. The additional staff required to take measurements in the beef cattle trials were funded from Consolidated Revenue and the special tickets were provided through a Commonwealth Beef Classification Grant.

Lamb classification was available on request at abattoirs at Blayney and Wagga Wagga and lamb producers in the Lachlan Valley commenced trading on the basis of classification with a major supermarket chain.

Five abattoirs provided the P2 back fat depth measurement, which is the system proposed for national adoption for pigs. At these abattoirs, and at those carrying out trials of beef and lamb classification, measurements were monitored by the State Meat Inspection Service.

Eighteen introsopes used for measuring the P2 back fat depth were purchased, using a grant from the New South Wales Swine Compensation Fund.

Feral Pigs

The North West Feral Pig Control Scheme terminated on 30th June, 1981. It involved 13 Pastures Protection Boards in a co-ordinated effort to reduce feral pig numbers and was subsidised by a grant of \$300,000 from the State Government.

In 1977, the feral pig population in the northwest of the State was estimated at 1 million pigs, causing damage to agriculture to the value of about \$10 million annually.



End of the road for another lot of destructive feral pigs. Methods of controlling this rural pest are being studied by the Noxious and Feral Animals Research Unit.

Over the three year period to June, 1981, an estimated 300 000 pigs were destroyed by 1080 poisoning programmes and another 300 000 killed by other measures such as shooting and trapping. The drought has also reduced numbers. The feral pig population is now at its lowest level for many years. This was the first serious attempt at large-scale control.

It was a mammoth task in an area covering half of New South Wales and involving 4 000 land holdings with consequent difficulties in co-ordination and communication.

Initially, reactions to the campaign varied from strongly positive to a negative "do nothing" but now awareness of the problem is greater than ever before.

Control measures improved as a result of field experience, and other authorities, such as the National Parks and Wildlife Service, and the Forestry Commission, are now more involved in combating the problem.

Research at the Department of Agriculture's Veterinary Research Station at Glenfield concentrated on feral pig biology and control. This research was extended into the field by technical officers located at the Agricultural Research Station at Trangie and through the Technical Officer at the Regional Headquarters at Dubbo.

Publications

The output of publications increased and their quality improved in line with the Department's emphasis on improving its advisory services. Departmental authors continued to add to the literature of agriculture in technical journals, conference proceedings and in many other ways.

The list of authors which appeared in previous Annual Reports as an appendix is now included as part of ABOA (Australian Bibliography of Agriculture) which is a machine-readable data base mounted on Ausinet (Australian Information Network) and publicly available by computer terminal access.

The "Agricultural Gazette of New South Wales", the Department's major periodical was published in six issues—one in full colour. It was supplemented by several other journals and magazines catering respectively for dairy farmers, poultrymen,

veterinarians, marketing and commodity interests, and agricultural economists.

Country officers continued to introduce locally-printed special-purpose newsletters to serve the needs of specific groups of primary producers—sometimes geographic, sometimes industry-based. These newsletters are an important part of the general advisory effort, because they enable the Department to get timely, relevant information to specific groups, in a personal and readily acceptable form. All high schools that teach agriculture receive two copies of all publications produced in Sydney, and this year steps were taken to extend this arrangement. These schools now also receive copies of other publications produced in their respective regions; and a single copy of the "Gazette" is being sent to all secondary school libraries.

Agfacts

A major innovation in publications for primary producers was the introduction early in 1981, of "Agfacts", a re-designed, easily filed and more attractive version of the long-standing farmer bulletin series.

Agfacts have several advantages over the series they replace, chief among which is the speed with which they can be produced. Thanks to special arrangements made by the Government Printer, publications that formerly took months to produce can now be produced as single-sheet Agfacts in a few weeks—or, in emergencies, in a few days.

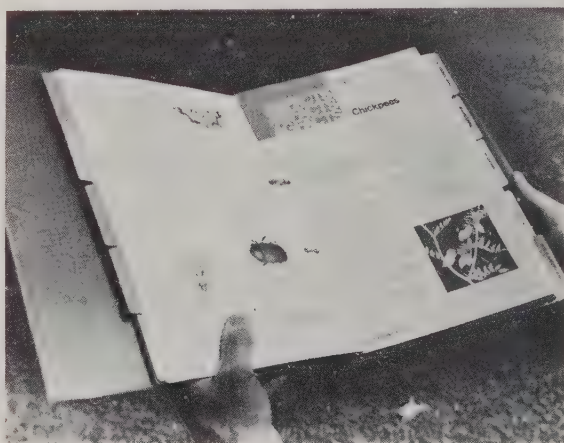
Another advantage of Agfacts is that they are colour and numerically coded by the Agdex system, which simplifies their storage and retrieval. Agdex coding of agricultural information has been adopted by all States in Australia, and most States have a similar publication series.

The New South Wales series has no upper limit to the length of Agfact, so that lengthy topics do not have to be—sometimes arbitrarily—divided into separate sheets; and Agfacts are available free to all inquirers.

A plastic ring-lock binder, with Agdex dividers and instruction sheet, is sold for \$4.00, to help people to store their Agfacts in an orderly way. The Department also sells an Agdex code book for \$6.00 for those who would like to store other pieces of information by the same system.

A computer printout system was developed to assist in the management of Agfacts production and distribution. The first list contained more than 700 titles in the farmer bulletin Agfacts series.

"Agfacts", the Department's new-look information pamphlets, provide sound, practical information on a very wide variety of topics. A special binder is on sale, and includes subject section dividers for ease of filing and later reference.



Agricultural Education

The Department's responsibility for providing an agricultural education service is implemented through the courses offered by the C. B. Alexander Agricultural College at Paterson, and the Murrumbidgee College of Agriculture at Yanco; the correspondence courses conducted by the Correspondence Courses Production Unit in association with the Rural Youth Council; and, delivery of courses by some district officers at institutions operated by the Department of Technical and Further Education.

The courses offered by the Colleges, and student statistics, were:

Student Statistics				
Colleges and Courses	Enrolment		1980 Final Examination	
	1980	1981	Sat	Passed
C.B. Alexander Agricultural College—				
Certificate in Agriculture	86	89	79	78
Advanced Certificate in Agriculture	62	61	61	56
Total	148	150	140	134
Murrumbidgee College of Agriculture—				
Level 1 Certificate in Agriculture	71	74	57	51
Level 2 Certificate in Agriculture	22	16	22	22
Level 2 Certificate in Irrigation	12*	18*	4	4
Level 2 Certificate in Rangeland Management	5	2	4	4
Total	110	110	87	81
Total for the two Colleges	258	260	227	215

* Includes part-time students (Departmental officers in training); 6 in 1980, 16 in 1981.

The Murrumbidgee College of Agriculture (formerly Yanco Agricultural College) changed its name on 1st January, 1981. The purpose of the name change was to avoid confusion with Yanco Agricultural High School and to better identify the College with that part of the State in which it is located—the Murrumbidgee Irrigation Areas. The name change was proposed by the Advisory Council of the College.

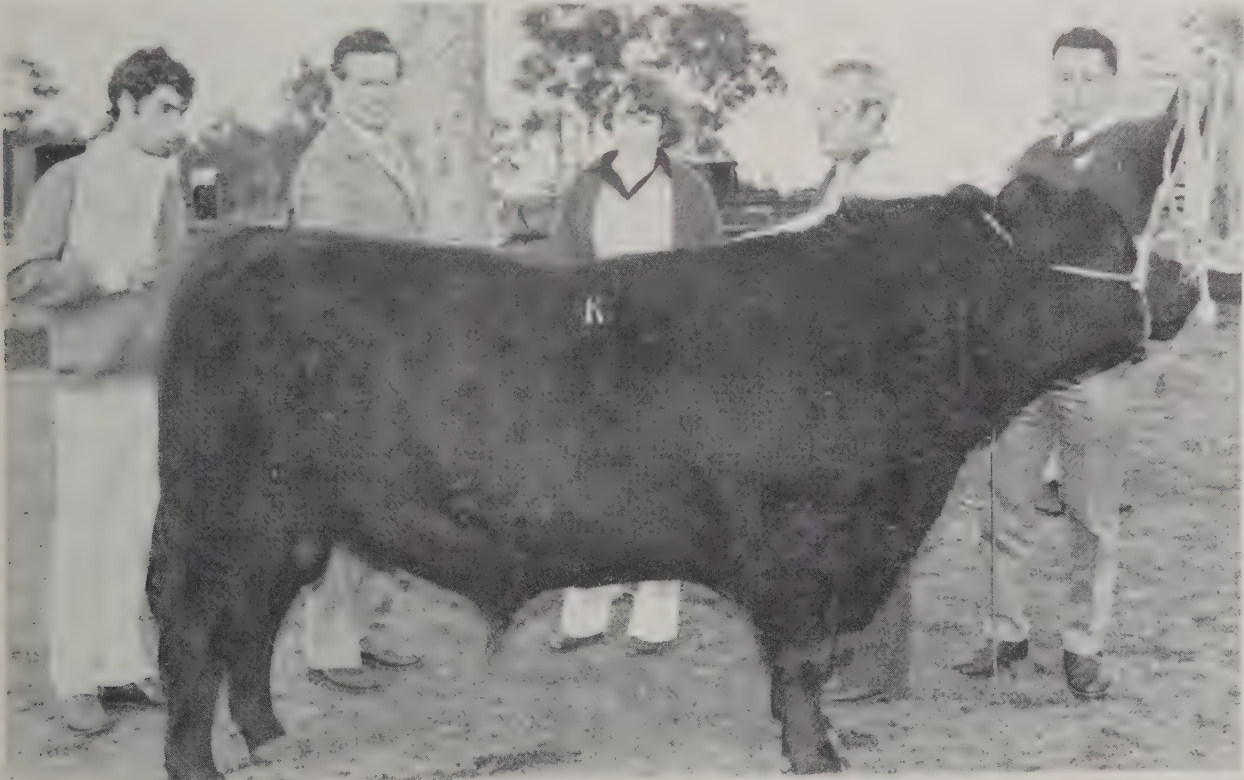
Two courses on welding for graziers in the Western Division were a significant new development within the short course programme conducted by Murrumbidgee College of Agriculture. They were organized in association with the local advisory officer and graziers. Equipment and staff were transported from the College to the course venue. Graziers in this area of New South Wales have large distances to travel to service centres and a consequent need to be more self-reliant in making repairs to implements. The courses were highly successful but the cost of providing staff and equipment was high. An approach has been made to the Board of Adult Education, by an organization of people interested in continuing the programme, for supplementary funding.

The C.B. Alexander Agricultural College enrolled 16 apprentices in 1980, under the Dairy Farm Apprenticeship Scheme and 12 progressed to the second year of their part-time studies in 1981. The College is ideally situated to take part in the Scheme which is a new initiative of the Department in co-operation with the New South Wales Dairy Farmers' Association and the Department of Technical and Further Education. It is designed to assist young people to gain some formal training while being gainfully employed in the dairy industry.

Placement of students after completing their course continued to be a feature of the College commitment to its students. At the end of the 1980 academic year only five of 60 students seeking employment were unplaced and negotiations were still in progress.

Orange Agricultural College is administered by the Department through the Regional Director of

C. B. Alexander Agricultural College's "extra curricular" activities are many and varied. A regular feature is the Angus Judging School, which this year attracted two participants from Tasmania.



Agriculture at Orange. However, it is funded by the Higher Education Board and provides an annual report on its activities to that organization.

Library Services

The technical library service comprises collections under the care of librarians at the Head Office library, the Biological and Chemical Research Institute, the Glenfield Veterinary Research Station, the three Agricultural Colleges and the five research centres at which there are Regional Directors of Research. Other material is stored at regional advisory headquarters, district offices, and research stations throughout the State.

Full-time Regional librarians have been appointed. Their prime duty is to match the needs of each professional officer with the resources available.

Membership of the CLANN network, a cataloguing co-operative of CAE libraries, allows access to the combined holdings of most of the colleges of New South Wales and provides a union catalogue of microfiche of the holdings of the Department at every location.

Organization of Globe Pass, the periodical management programme of Globe Subscription Agency, allows instant generation of current information on the holdings and circulation of periodicals at every location.

ABOA (Australian Bibliography of Agriculture), the co-operative data base established by the State Departments of Agriculture and CSIRO allows control of Australian agricultural publications. The data base is available on Ausinet (Australian Information Network) and will allow remote locations access to a list of the national publication output in agriculture and indicate where copies of that output may be obtained.

Agricultural Bureau of New South Wales

The Agricultural Bureau is a State-wide organization of primary producers, with a long and mutually beneficial association with the Department of Agriculture. The Department continued to provide administrative assistance for the State council and support for local branches. Membership of the Bureau in 1980–81 remained relatively static in comparison with the previous two years at 2 289 members in 68 branches.

Severe drought conditions throughout most of the State caused cancellation of the annual Beef Cattle Breeders' Competition conducted by the Bureau in association with the Department. In its place a series of drought management meetings were held with the assistance of the Departmental staff.

An initiative of the Bureau during the year was to obtain sponsorship to bring to Australia a leading farm business analyst, Mr Hiram Drache from the United States of America, for a series of talks on "The Portrait of a Successful Farmer". Through these arrangements a series of talks will now take place in 1981–82.

An Agricultural Bureau Organizer was appointed during the year to work with branches in the southern part of the State and to stimulate interest in the Bureau. Five new branches were formed and four existing branches were consolidated.

Rural Youth Organization

The Rural Youth Organization provides training in farming skills, self development, and leadership for its members.

Department of Agriculture staff assisted the governing bodies of the Organization and provided guidance for local clubs and members. Membership increased during the year to 4 604, a rise of 10 per cent over the 1979–80 membership.

The AMPOL Club Award was introduced in 1980–81 to encourage clubs to assess their programmes and to improve their activities for members.

The first State Roundup was conducted at Maitland during the year. The programme consisted of numerous tests of agricultural skill, debating, and public speaking. It was an outstanding success and was well attended by members from all parts of the State.

Some examples of activities during the year are:

- Super-pork Promotion—Boree Creek, Coolamon.
- Machinery Maintenance School—Coonabarabran.
- Rural Youth Exhibits—Maitland and Newcastle Shows.
- Careers Exposition—Sydney.
- Irrigation School—Yanco.
- Horse Management School—Maitland.

Correspondence Courses for Farmers

The Farm Management and the Farm Office Management correspondence courses initiated by the Rural Youth Council some ten years ago continued to provide the opportunity for farmers and their wives to improve their skills and knowledge in their own time, in their own homes.

Since the transfer of the Rural Youth Organization from the Department of Education to the Department of Agriculture in 1973, responsibility for conducting and mounting these courses has rested with the Department of Agriculture. The popularity of these courses is reflected in an increase in enrolment which stood at over 500 students in 1980–81. The majority of students are practicing farmers or their wives.

In March, 1981, the Department of Agriculture substantially increased its commitment to both courses by establishing the Correspondence Course Production Unit at C. B. Alexander Agricultural College, Paterson. This unit, consisting of two professional and two support staff, produces and distributes course materials to students in both courses.

Front-line advisory staff of the Department provided tutorial assistance to students at the local level, and residential schools were held during the year. Enrolment for 1981 was 209 in the Farm Management Course and 306 in the Farm Office Management Course.

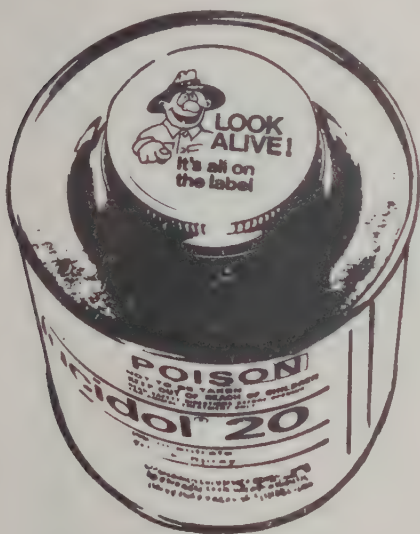
Pesticide Use Campaign

The campaign was developed as a positive and complementary initiative to the Department's regulatory programme on pesticides under the Pesticides Act (1978). The campaign encouraged people (by informing them about pesticide misuse and how to avoid it) to use pesticides safely and responsibly.

The objectives and methods used in the campaign were designed after an analysis of factors in the environment in which pesticides are chosen, mixed, applied and disposed of. It was implemented across the State from late November, 1980, to early February, 1981, and involved co-operation with regional and district staff.

The best result was achieved in the southwest, where a large range of channels of communication were used frequently. As assessed by a random sample telephone survey, very high levels of audience recall of information were achieved amongst farmers and townspeople alike.

Radio, television and newspapers were the channels most often mentioned as sources of campaign messages in the telephone survey. A comprehensive report was prepared on the campaign, outlining the methodology used and evaluation procedures to measure the results achieved.



"Look alive—it's all on the label" advises Citizen Sam, front-man for the Department's imaginative and very successful campaign to advise on proper use of pesticides. A variety of printed matter, including "Look Alive" stickers, was pressed into service.

Commonwealth Extension Services Grant (CESG)

The Commonwealth Extension Services Grant for more than two decades has been a source of funds for projects such as regional research, market information, information services, farm business management, staff training and evaluation of extension and applied research.

However, following recommendations of the Committee of Review of Commonwealth Functions, the Commonwealth Government terminated the CESG as from 30th June, 1981.

Nearly half the 1980–81 allocation of \$1.2 m was used for salaries of the 34 positions affected. Also, the Grant was the only source of external funding for advisory services in New South Wales, and a major source of operating funds.

The following table records allocations for salaries, operating and capital items from 1977–78 to 1980–81.

Year	Salaries	Operating	Capital	Total
	\$	\$	\$	\$
1977–78	1,625,183	655,202	163,381	2,443,766
1978–79	1,446,984	95,900	95,900	2,443,776
1979–80	660,195	505,805	35,000	1,201,000
1980–81	547,115	560,585	93,300	1,201,000

For details of expenditure during the past two years see Appendix III.

Training and Human Resource Development

Rapid changes in modern agriculture make it difficult for staff to keep abreast of new developments. The year 1980–81 was no exception. In fact, the pressure of urgent work associated with the widespread drought and the restructuring of the administration reduced the opportunities for staff to update their knowledge and skills.

However, despite these limitations, a large number of seminars, schools, conferences, workshops, symposia and study tours were arranged where individual officers were informed of new technology, observed new practices, or improved their skills in communicating with their clients.

The following sample of the training and development activities which took place in 1980–81 indicates the range and scope of the Department's responsibilities and the steps taken to maintain the professionalism of its staff:

- Deer Farming Seminar—Gosford.
- Carpet Wool Workshop—Hobart.
- Beef Cattle Section School—Head Office.
- Vegetable Study Tour—Queensland.
- Irrigation Workshop—Yanco.
- Research Horticulturists' Conference—Paterson.
- Mushroom Industry Conference—Sydney.
- Cotton Research Conference—Narrabri.
- Meat Inspectors' Conference—Sydney.
- Vegetable School for Horticulturists—Rydalmere.
- Soil Acidity Seminar—Bathurst.
- Port Inspectors' Training Course—Sydney.
- Cereal Improvement Conferences—Tamworth, Condobolin.
- Tropical Fruit Conference—Wollongbar.
- Communications Skills Workshop—Orange.
- Planning Workshop for Advisory Officers—Orange.
- Dairy Refresher Course—Paterson.
- Ornamental Horticulture School—Rydalmere.
- National Berry Fruit Seminar—Orange.
- Rangeland Workshop—Broken Hill.
- Regional Publicity Officers' Workshop—Head Office.

On many occasions during the year staff with particular skills in communication were called upon to conduct activities for rural groups. Examples were: Leadership Course for 20 young dairyfarmers at Hawkesbury Agricultural College; Problem Solving and Communications for broiler industry servicemen, Hawkesbury Agricultural College; and Public Speaking and Publicity for the Holstein Friesian Cattle Association.

Research Services

The Research Services of the Department of Agriculture provide information and services to assist the Department's advisory and regulatory functions and to help farmers to solve production problems and to improve farm production systems. The continuing aim is to help farmers increase productivity so that their capacity for adjustment to economic change is enhanced; and to contribute to the pool of knowledge from which future advances may be devised.

An adjunct of the research function is the provision of a scientific service under which diagnostic and analytical information is provided direct to farmers and to research, advisory and regulatory staff of the Department. For example, in 1980-81, 32 970 samples of plants, soil, water, fertilizer, stock feed, pesticides, essential oils and cereals were subjected to 208 928 tests by the Chemistry Branch of the Biological and Chemical Research Institute at Rydalmere.

A wide range of disciplines is involved in the research services provided by the Department throughout the State. The following establishments where research is carried out are essential parts of the Department's regional administrative structure.

- Agricultural Research Centre, Wollongbar.
- Agricultural Research Station, Grafton.
- Tropical Fruit Research Station, Alstonville.
- Agricultural Research Centre, Tamworth.
- Agricultural Research Station, Narrabri.
- Poultry Research Station, Seven Hills.
- Agricultural Research Station, Glen Innes.
- Horticultural Research Station, Gosford.
- Horticultural Postharvest Laboratory, Gosford.
- Agricultural Research Station, Trangie.
- Agricultural Research and Veterinary Centre, Orange.
- Agricultural Research Station, Condobolin.
- Agricultural Research Station, Bathurst.
- Agricultural Research Station, Cowra.
- Agricultural Research Centre, Yanco.
- Horticultural Research Station, Dareton.
- Viticultural Research Station, Griffith.
- Agricultural Research Institute, Wagga Wagga.
- Agricultural Research Station, Leeton.
- Agricultural Research, Temora.

In addition research services are provided from the Veterinary Research Station, the Agricultural Engineering Centre, the Noxious and Feral Animals Research Centre and the Drought Research Unit—all at Glenfield; the Biological and Chemical Research Institute, Rydalmere; the Horticultural Research Unit at Richmond, and the Dairy Research Centre also at Richmond, and the Artificial Stock Breeding Centre at Berry.

The main financial support for research came from Consolidated Revenue, and about 10 per cent came from rural industry research grants.

	1979-80	1980-81
	\$	\$
Australian Meat Research Committee	491,794	594,826
Wool Research Trust Fund	318,070	284,945
Wheat Industry Research Committee of N.S.W.	315,458	513,552
Wheat Industry Research Council	179,109	257,975
Australian Pig Industry Research Committee	69,675	47,378
Dairying Research Committee	61,420	40,410
Poultry Research Advisory Committee	30,130	28,527
Australian Chicken Meat Research Committee	20,550	21,610
Dried Fruits Research Committee	17,400	15,700
Oilseeds Research Committee	31,500	87,176
Honey Research Committee	1,000	2,400
Central Tobacco Advisory Committee	68,845	73,219
	\$1,604,951	\$1,967,718

Approximately \$0.5m was available in 1980-81 from miscellaneous sources. These include: Australian Cotton Growers Research Association; Mushroom Growers Association; Central Coast Citrus Growers Association; Rural Credits Development Fund; Commonwealth Special Research Grants.

Research Results

The major results from research activities in 1980-81 have been reported under the various commodity headings in this Report. However, a number of major activities and findings of agricultural significance do not fall under the scope of particular commodities.

Some research and new developments not covered under the commodity headings, involve the professional staff of the Biological and Chemical and Chemical Research Institute at Rydalmere. Their responsibilities include research, liaison, service to research and industries, and regulatory duties relating to various Acts. The following activities show the scope of the work done by the Biological and Chemical Research Institute.

Legume Bacteriology

Legume biologists carried out research on factors influencing the establishment of nodule-producing bacteria in the soil and on plants. They distributed cultivars of these bacteria to other research centres and industrial organizations, and advised district officers on the best methods of legume inoculation. The Australian Inoculant Research and Control Service, financed by the Australian Agricultural Council maintained a quality control service for commercial legume inoculants available throughout Australia to ensure the maintenance of high nitrogen fixing ability.

Wingless Grasshoppers

Wingless grasshoppers continued to be a major problem of pastures and crops throughout the tablelands during the spring and summer of 1980. Infestations were even more severe than those recorded the previous year. Although there was evidence by February, 1981, that extreme drought conditions had resulted in heavy grasshopper mortalities in many districts.

The major research programme, initiated in 1979-80 with funding from the Australian Meat Research Council, continued into its second year. Useful data on the role of parasites and on the influence of pastoral management have already been accumulated.

The investigation of strategic early season use of insecticides has shown to be promising as an alternative to broad area spraying after the problem has become evident and widespread. During the worst of the infestation period the Department released large quantities of insecticide (originally purchased for plague locust control) to affected growers at reduced cost. The value of insecticide distributed in this way through Pastures Protection Boards was \$159,000. In addition, the Department provided six misting units to assist landholders to control the wingless grasshoppers.

Eucalypt Dieback

Dieback of eucalypts continued to be a serious problem during the year, particularly in the New England districts. A research programme was commenced at Armidale but a quick solution to this complex problem is not expected. However, a number of promising lines of research have been identified. Approaches commenced include a field survey of insects of eucalypts, the glasshouse rearing of immature stages of these insects, historical analysis of climatic and biological data, and tissue culture of eucalypt trees that appear to have withstood dieback better than surrounding trees.

Effect of "Fertigation" on Soil Nutrient Status

"Fertigation" is a term used to describe the addition of fertilizer to irrigated water. The effect of fertilizer on nutrient distribution in a furrow irrigated soil was studied at the Yanco Agricultural Research Centre. Urea was rapidly hydrologized to ammonia as it moved with the infiltrating water from the furrow into the hills. When the urea was applied in the first two hours of irrigation, hydrolysis carried it well below the soil surface and the ammonia distribution was even throughout the profile. By contrast, applying urea late in the irrigation resulted in the ammonia being confined to a few centimetres of the furrow and beyond the reach of the plant roots.

Structural Deterioration of Irrigated Soils

Soil structural deterioration is thought to be causing the decline of irrigated cotton yields in the Namoi and Gwydir River Valleys and of irrigated wheat yields in

the Macquarie River Valley. The aim of this work is to consider, and to investigate ways of improving, soil structural conditions to give increased yields. The grey and brown clays tend to develop a poorly structural layer at a depth of 40 cm which impedes drainage and root penetration.

A number of amelioration and management strategies designed to overcome this problem are being investigated at Narrabri and Trangie.

Orange Agricultural Research and Veterinary Centre

On 27th March, 1981, the Hon. N. K. Wran, Q.C., M.P., Premier of New South Wales, officially opened the Agricultural Research and Veterinary Centre, Orange. This major new complex, costing \$4.2 million, contains the most modern laboratory accommodation for chemical analysis, biochemistry, Biological services such as entomology, plant pathology and veterinary pathology, microbiology, serology, parasitology and post mortems. In addition, there is a herbarium for weed species and the headquarters of the Regional Library. Conference, seminar and staff amenities are provided to complement the professional and administrative accommodation in the complex.

Although the Unit is designated as a Regional Centre, its sphere of influence extends beyond regional boundaries as many of the programmes conducted have State-wide application.

Considerable emphasis is given at the new Centre to liaison between advisory officers and research staff through co-operative activities in experimental programmes. Special advisory officers in the fields of agronomy and livestock production located at the Centre maintain a close association with frontline advisory staff throughout the State, and in turn benefit from close proximity to research workers.

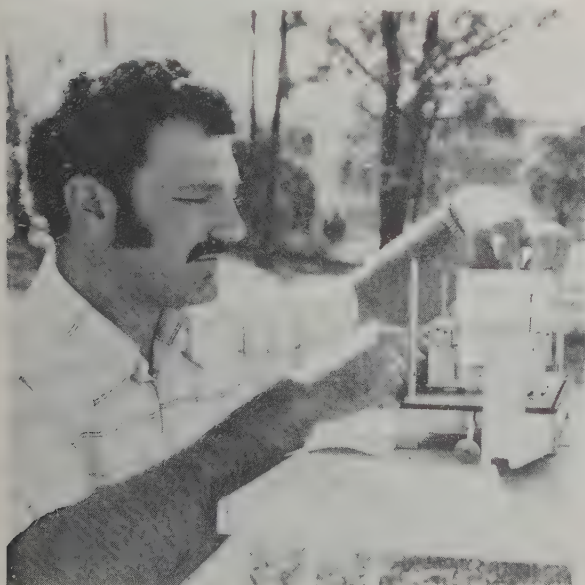
Research projects already under way include: cultural practices and pest control in pome fruit; weed control studies; aerial pasture development; sheep nutrition for wool production; carpet wool industry development; on-farm pig production; wheat production, and pasture research in the central-west.

The Regional Veterinary Laboratory provides a veterinary pathology service to livestock producers in the central west and far west of New South Wales. The function of the Laboratory is to supply diagnostic pathology services for the investigation of disease conditions in commercial livestock within the large western section of the State.

It completes the Department's long-term plans to provide a diagnostic service across the State to safeguard animal industries. There are now regional laboratories at Armidale, Glenfield, Orange, Wagga and Wollongbar, and a central veterinary laboratory at Glenfield.

An important responsibility of the laboratory is to provide back-up for State and national disease eradication campaigns. Currently the Laboratory is heavily involved in the eradication campaigns for brucellosis and tuberculosis in cattle.

The Early Brown Rot Forecasting Service continues to alert orchardists to any likely threat from brown rot. District Horticulturist John Dirou checks weather records, an important part of the forecasting process.





Premier Neville Wran shows interest in the research use of radio-active isotopes, being explained here by Senior Technical Officer Greg Stevens. This was part of Mr Wran's inspection tour after he opened the new Agricultural Research and Veterinary Centre at Orange.

The opening of the Orange Agricultural Research and Veterinary Centre preceded by three months the introduction of the Department's regionalization programme. The Centre provides, in most modern and functional facilities, a unit which brings together specialized expertise in crop, pasture and animal research, animal health, and technical support services for advisory staff at the one location.

Agricultural Engineering

The Agricultural Engineering Branch at Glenfield services the engineering technology needs of the Department relating to plant, equipment and ancillary services. It conducts research into areas of agricultural engineering relevant to the Department of Agriculture and its clients. Most current projects concern the mechanization needs of the cropping industries and engineering work on rural energy.

The major activity at the Agricultural Engineering Centre Glenfield was the construction of an experimental fuel ethanol plant capable of producing 100 litres of fuel alcohol per hour. The experience gained through the design and construction and commissioning phases of the project, now in its second year, have contributed significantly to a better understanding of the realities of smaller scale fuel alcohol production. It is expected that the plant will be commissioned in late 1981.

Engineering research at the Agricultural Research Station, Condobolin concentrated on reducing the energy required for tillage operations. Improved measuring equipment was developed to measure the energy requirements and other parameters of various tillage implements and soil engaging systems. Initial results quantified the effects of different types of implements, soil types and soil moisture on the draft and energy required for tillage.

Agricultural Mechanization Officers

The eight agricultural mechanization officers throughout the State and one senior officer at head office advised farmers on a wide range of farm mechanization topics during the year. Innovative developmental work by these officers include: specialized vegetable seeding transplanter; chemical treatment of hay to improve digestability; installation of electric fences; carry-drag scraper studies; a computer data bank on tractor models; methane gas generation from livestock wastes; tractor selection and implement matching; minimum cultivation techniques for crop production.

Marketing and Economics

The Division of Marketing and Economics provided economic information and analysis relating to the State's agricultural policies.

Laser land levelling is being used more and more in preparing land for irrigated crops, and the Department, in conjunction with commercial interests, has organized a number of field days to demonstrate the method.





A cattle sale in progress at the Gunnedah Saleyards. The Department's Livestock Market Reporting Service regularly provides the media and other interested parties with reports of current prices and trends.

This Division provided advice on commodity prospects, marketing schemes agricultural economics and farm management and undertook research on the production, marketing and handling of agricultural products.

Commodity Markets

Commodity markets investigated included carpet wool, cashmere, protein feeds, goat meat and avocados. To coincide with trading in live lamb futures on the Sydney Futures Exchange, economists explained the use of futures markets to meetings of farmers. A "Futures Game" for live lambs was adapted from the beef cattle futures game as an instructional aid.

Forecasting of trends continued, particularly beef market forecasting. Domestic and overseas markets for agricultural products were monitored and reported in publications and on radio.

Market Reporting Service

Reports were issued to the media and others on each trading day covering fruit, vegetables and cut flowers sold at Flemington; and livestock sold at Homebush, Wagga Wagga, Dubbo, Tamworth, Gunnedah, Armidale, Casino and Goulburn. Reporting at Moree ceased during the year because of low yardings due to the drought.

In addition, metropolitan retail prices of fruit, vegetables, meat and fish were reported daily; and wholesale prices for grain, butter, cheese, bacon, ham, pollard and eggs were reported weekly or fortnightly.

Farm Business Management

Economists continued research and advisory activities with computers as farm management aids. The COMPLAN computerized farm planning service was continued and a number of handbooks similar to those used in COMPLAN were produced for several regions.

Economists in the Southern Region conducted a series of schools and demonstrations for farmers on the use of micro computers.

The popular booklet "Sources of Rural Finance" was revised and reprinted during the year. A new publication "Farm Purchase Handbook" was produced.

Production and Economics Research

Major investigations were the economics of water usage in a number of regions, the economics of plant variety rights, control of pests in stored grain, consumption patterns of farm families and the lot feeding of lambs. Economists worked in conjunction with the Western Lands Commission in a survey of western land leases. A study of milk vendors was carried out under the Dairy Industry Marketing Act.

Submissions to Inquiries and Government Businesses

Evidence was presented to inquiries into tuberculosis and brucellosis; superphosphate and miscellaneous food products (sweet corn). Economists assisted the committee inquiring into the Young Farmer Establishment Scheme and contributed to the Cattle Tick Review Committee Report.

Studies were published relating to grain storage arising from contributions to the inquiry into grain handling in New South Wales.

Environmental Issues

The Department of Agriculture is increasingly involved with environmental issues because of the rapid industrial development in New South Wales. Advice was given throughout the year to other State departments, local government and individuals on the impact of industrial and urban development on Agriculture.

Research and advisory aspects of pesticides and environmental issues affecting Agriculture in New South Wales are co-ordinated by the Pesticides and Environmental Studies Unit of the Department. The Unit worked closely with other Departmental staff, State and Commonwealth authorities, agricultural chemical industries, and mining and development companies.

The Department's service is a watchdog over agricultural land to protect it from the adverse effects of some types of industrial and urban development. All major environmental impact statements concerning these developments were assessed by officers of the Department with specialized knowledge. Reports were forwarded to the appropriate authority for inclusion in the recommendations of the environmental impact assessments. In all, 41 environmental impact statements were reviewed during the year. These covered major developments such as: Tomago, Lochinvar and Alcan Aluminium Smelters; Ulan to Sandy Hollow Railway; Drayton Colliery; Eraring Open Cut Mine; Mt Thorley Coal Mining; Mt Piper Power Station; Ulan Coal Mine Expansion; Split Rock Dam and subdivision of "Retford Park" and "Milton Park".

A new area of development during the year was agroforestry in New South Wales. The Pesticides and Environmental Studies Unit maintained close liaison with the Forestry Commission of New South Wales in assessing the role of private forestry and trees in the farming situation.

Land Use

The loss of thousands of hectares of better quality agricultural land in recent years has caused concern to the Department of Agriculture and to many local government authorities. During the year the Pesticides and Environmental Studies Unit, the Chemistry Branch of the Biological and Chemical Research Institute, and the Planning and Environment Commission co-ordinated a series of agricultural land suitability studies and produced "Regional Land Evaluation Manual" which will serve as a guide to local government authorities and other state authorities in proper zoning of land. Its purpose is to protect prime agricultural land from other land use options during the planning and formation stages of land use policy.

A recent example of a detailed agricultural land suitability study was in the Cudgen/Duranbah area of the Tweed Valley where a team from the Department surveyed the area and made recommendations concerning its future use. Since then several other councils have approached the Department to undertake similar studies.

Pesticide Residues

The Unit was involved in co-ordinating an investigation of the distribution of DDT and fenvalerate in the Gwydir Valley. This study involved the Department of Agriculture, State Pollution Control Commission, National Parks and Wildlife Service and the New South Wales State Fisheries. Results showed that contamination by both pesticides was generally below analytical detection limits, suggesting that contamination of the aquatic environment is of a low order. A similar study was undertaken in the Murrumbidgee Irrigation Areas.

During the year the Unit gave advice to members of the urban and rural communities on pesticide use and disposal. Advice was also given on environmental problems associated with incorrect pesticide usage.

Argentine Ants

A survey was provided on information on the identification and control of Argentine ants. During the year 912 inquiries were dealt with.

A publicity campaign between January and March, 1981, resulted in 12 054 samples being submitted from which four new infestations were detected.

Remote Sensing

Work done by the Remote Sensing Unit of the Department is in the forefront of this type of research in Australia and is highly regarded overseas.

The main research effort in 1980-81, aimed at developing techniques for the operational application of digital Landsat data for monitoring agricultural resources, particularly crops.

Significant results were produced in a co-operative project with IBM Australia Ltd at Narrabri, where crops and other land uses were identified and mapped over the whole shire with an accuracy of more than 98 per cent.

The joint project using the IBM analysis facility showed that space technology can now discriminate between cropping and other land uses. Implications from the work suggest a potential for deriving production estimates by classifying the wheat crop into different yield classes.

Overseas Projects

The Department actively supported the overseas aid programme of the Australian Development Assistance Bureau, as their managing agent for overseas projects and through the provision of technical advisers to overseas countries.

During 1980-81, the Department managed a cattle development project in Bangladesh, a dairy development project in the Republic of Seychelles and a land development project in Sri Lanka on behalf of the Bureau. Total development costs for these projects are estimated at \$9.25 million.

In addition, senior specialists of the Department participated as advisers and consultants on short assignments to the Seychelles, Sri Lanka, Bangladesh, Philippines, China and Colombia. In all, 13 officers spent a total of 44 weeks on overseas assignments.

In March, 1981, the Department began developing a model beef cattle farm on Hainan Island, China. This was in response to a request from China arising from the Province-State relationship between the Governments of Guangdong Province and New South Wales. Two Departmental officers are located with the project as technical advisers and they were supported through visits by senior specialists from the Department.

Farrer Memorial Medal 1980

The 1980 Farrer Memorial Medal was presented to Mr Ronald Holland Martin, Senior Research Agronomist from the Agricultural Research and Advisory Station, Temora, at a ceremony in the Great Hall of the University of Sydney, on 11th November, 1980.

In presenting the award, the Director-General of Agriculture and Chairman of the Farrer Memorial Trust, Mr G. H. Knowles paid tribute to Mr Martin's contribution to wheat breeding since 1947, during which time he has bred the varieties Falcon, Eagle, Teal and Kite.

The Medal is conferred annually for outstanding service to agriculture in commemoration of William James Farrer, Australia's pioneer plant breeder.

Government Inquiries

Grain Handling Inquiry

The Department of Agriculture provided administrative support for four New South Wales Government Inquiries. Departmental officers either chaired, or served on three of the four.

The New South Wales Grain Handling Inquiry was chaired by Mr A. Carmichael, C.B.E. Other members were Mr J. Ducker and Mr H. Renshaw. The Inquiry received 62 written submissions and held formal and informal discussions with organizations involved in the New South Wales grain handling system. Following the release of the report of the Inquiry, the Department was involved in the preparation of legislation and electoral regulations.

Young Farmer Establishment Scheme

The working party chaired by one of the then Deputy Directors-General, Mr B. Owen French, set up late in 1980–81, considered schemes designed to assist young people become established as farmers. The Inquiry included representatives of the New South Wales Rural Youth Council, the Livestock and Grain Producers' Association of New South Wales, the New South Wales Rural Assistance Board and the New South Wales Treasury.

Egg Industry Inquiry

The two-man Committee of Inquiry established in April, 1981, to review the production and marketing of eggs in New South Wales is proceeding. It is chaired by the Chief, Division of Animal Production, Department of Agriculture.

2,4,5-T Inquiry

An Inquiry into the use of the herbicide, 2,4,5-T under the Chairmanship of Mr W. Lewers, began receiving written submissions on 22nd May, 1981.

Regulatory Services

Regulatory Function of the Department

As implementation and enforcement of statutory provisions is the function of Government, the New South Wales Department of Agriculture has a basic role in:

- The control or eradication of plant and animal diseases and pests.
- Ensuring high quality in agricultural products, especially foodstuffs, and aids such as stock medicines and pesticides.
- Maintaining standards of conduct in areas of activity associated with agriculture.

These powers and responsibilities are vested in the Department through various Acts and their Regulations.

Some officers combine regulatory work with other activities. In addition, special groups are appointed for specific regulatory functions: for example, meat inspection, cattle tick control, brucellosis eradication, plant disease regulations, quarantine inspection for imported produce and quality inspections for exports.

Regulatory Staff

The following table summarizes Departmental staff who are inspectors under an Act who are directly involved in regulatory work. Many of the professional staff have a dual/advisory regulatory function. Regulatory work is a major activity in three divisions as shown below.

Departmental regulatory staff as at 30th June, 1981

	Central Adminis.	Animal Inds.	Horti-culture	Plant Inds.	Biological and Chemical Research Institute	Total
Professional Inspectors	5	89	4	1	1	100
Inspectors	14	855	136	13	0	1 018
Total	19	944	140	14	1	1 118

The Legal Section, in consultation with relevant Divisions, prepares legislation (including amendments to existing statutes), prepares information for prosecutions and appears on behalf of the Department in defended cases. The following general activities were undertaken under State Acts: informations prepared 114; proclamations 28; notifications 16; and gazettal of appointments, etc., 56.

Main Acts Concerned With Regulatory Activities

The Department's regulatory activities are carried out under the following main Acts:

- State Acts: Agricultural Holdings Act, 1941; Agricultural Seeds Act, 1921; Apiaries Act, 1916; Banana Industry Act, 1969; Canned Fruit Marketing Act, 1979; Cattle Compensation Act, 1951; Dairy Industry Marketing Authority Act, 1979; Dried Fruit Act, 1939; Farm Produce Agents Act, 1926; Fertilizers Act, 1934; Horticultural Stock and Nurseries Act, 1969; Marketing of Primary Products Act, 1927; Meat Industry Act, 1978; Noxious Act, 1934; Pastures Protection Act, 1934; Pest Destroyers Act, 1945; Pesticides Act, 1978; Plant Diseases Act, 1924; Potato Growers Licensing Act, 1940; Poultry Processing Act, 1969; Registration of Stock Brands Act, 1921; Stock (Artificial Insemination) Act, 1948; Stock (Chemical Residues) Act, 1975; Stock Diseases Act, 1923; Stock Foods and Medicines Act, 1940; Swine Branding Act, 1940; Swine Compensation Act, 1928; Veterinary Surgeons Act, 1923; Wine Grape Processing Industry Act, 1979.
- Commonwealth Acts: Quarantine Act 1908–73; Commerce (Trade Descriptions) Act, 1905.

Statistical information relating to the major Acts is in Appendix II. Highlights of regulatory activities and disease and pest control follow:

Summary of Legislative Activities

Amendment to the following legislation was undertaken:

- Acts:
 - Potato Growers Licensing (Amendment) Act, 1980.
 - Wheat Marketing (Amendment) Act, 1980.
 - Stock Diseases (Further Amendment) Act, 1980.
 - Plant Diseases (Amendment) Act, 1980.
 - Swine Compensation (Amendment) Act, 1980.

Grain Handling (Amendment) Act, 1980.
 Wheat Marketing (Grain Handling) Amendment Act, 1980.
 Stock Diseases (Swine Branding) Amendment Act, 1981.
 Swine Compensation (Swine Branding) Amendment Act, 1981.
 Poultry Processing (Amendment) Act, 1981.
 Pastures Protection (Amendment) Act, 1981.,
 Banana Industry (Amendment) Act, 1981.

● Regulations and Number of Amendments:

Dried Fruits Act, 1939—2.
 Pastures Protection Act, 1934—1.
 Fertilizers Act, 1934—1.
 Stock Diseases Act, 1923—7.
 Registration of Stock Brands Act, 1921—1.
 Meat Industry Act, 1978—8.
 Cattle Compensation Act, 1951—1.
 Marketing of Primary Products Act, 1927—1.
 Egg Industry Stabilization Act, 1971—1.
 Noxious Insects Act, 1934—1.
 Dairy Industry Marketing Authority Act, 1979—1.
 Grain Handling Act, 1954—1.
 Farm Produce Agents Act, 1926—2.
 Swine Compensation Act, 1928—1.
 Pesticides Act, 1978—1.
 Horticultural Stock and Nurseries Act, 1969—1.

NEW REGULATORY ACTIVITIES

Plant Diseases Act

Powers under the Plant Disease Act were used extensively to prevent the spread of major pests and diseases. Particular campaigns included warehouse beetle eradication on the Murrumbidgee Irrigation Areas (M.I.A.), fruit fly quarantine on the Murray and M.I.A. and the control of bunchy top and banana weevil borer on the north coast. Action was taken in the near metropolitan areas against developers who neglected orchards.

The proclamation concerning importation of fruit and vegetables into the M.I.A. was amended to take account of the current disease situation. Controls were removed on the introduction of nursery stock other than grapevines, stone fruit trees, and used fruit and vegetable packages. The proclamation concerning the movement of grapevines into New South Wales and between grape growing districts was reviewed and consolidated to simplify requirements to prevent the spread of *Phylloxera*.

Horticultural Stock and Nurseries Act

This was the first year of operation of an annual registration date for approximately 2 500 nurserymen and 3 000 resellers. As all renewals become due on the registration date, an amending regulation was introduced to vary the fee for the first registrations proportionate to the period of registration granted. The Minister may approve grants from the fund of registration fees to individuals and organizations to undertake projects he considers will promote or develop the nursery industry. Five projects were approved during the year, including a grant of \$15,000 annually for three years to the University of Sydney for development of Australian native plants for the cut flower and potted-plant trade.

Dairy Industry Marketing Authority Act, 1979

The provisions of the Dairy Industry Marketing Authority Act, 1979, came into effect on the 1st July, 1980. The Act provides for the rationalization of functions between the Department of Agriculture and the Dairy Industry Marketing Authority. The Department is now responsible for all advisory and regulatory functions on the farm and is represented on the Dairy Industry Marketing Authority. The Dairy Premises Regulation, 1981, commenced on 20th March, 1981, and sets out standards for new and altered dairy premises.

Swine Branding Legislation

The Stock Diseases (Swine Branding) Amendment Act, 1980, was assented to on 24th April, 1981, and repeals the Swine Branding Act, 1940. Amendments to the swine branding legislation were necessary as there were some 30 000 pig brands issued under the Swine Branding Act but only approximately 6 000 active pig producers in the State. This situation rendered disease traceback ineffective. The new legislation requires all pigs offered for sale or slaughtered to be branded with a brand that relates directly to the cattle tag number of the property of origin.

New Animal Quarantine Station

The new animal quarantine station at Eastern Creek near Blacktown was put to good use during the year, its first year of operation. A total of 383 dogs, 197 cats, 203 horses, 2 pigs imported from overseas and seven cattle for a pre-export quarantine, entered the station. The quarantine service is a front line defence against exotic diseases and is vital in the protection of our livestock industries. The additional facilities at the new station proved their worth with the arrival during the year of the first Boeing 747 freighter in Sydney with 55 horses, 54 pigs and eight head of cattle on board.

At the Eastern Creek Quarantine Station, daily grooming by Michelle King helps keep coats healthy and is obviously a source of pleasure. After grooming, each animal is returned to its pen, a record is made of treatment given, and the area is disinfected.



Warehouse Beetle

This serious pest of stored products including grain seed and processed foodstuffs was first detected at Griffith in 1978. An eradication campaign, financially supported by Commonwealth and State governments has incurred an expenditure of \$611,500 over three years.

The campaign was largely directed towards eradication of warehouse beetle from the rice industry and was generally successful. Early in 1981, a scheme to eradicate the pest from the Murrumbidgee Irrigation Area at a cost of about \$1 million, was proposed. However, with infestation detected at Gunnedah and adjacent towns eradication no longer seems feasible. National funding of an intensive control programme may be considered.

Quarantine Act (administered for the Commonwealth)

The Quarantine Act was substantially amended to strengthen the legislation in line with recommendations of the Senate Select Committee Inquiry into Quarantine. In particular, the powers and authority of quarantine officers to enter and search premises and to copy documents were clarified. Action is also possible to control the removal of goods from vessels and to enable action before or after goods are released from quarantine. The scope of the Act was extended to include the Cocos Islands, in view of the construction there of the maximum security animal quarantine facility.

Inspection personnel co-operated fully with organizers of the Cantonese Trade Fair held in Sydney. Besides being able to facilitate the display, Inspectors gained information on some of the more exotic herbs and plant products rarely seen in Australia.

Interceptions of exotic pests and diseases potentially dangerous to Australian Agricultural industries occurred regularly. Giant African snail was detected on six occasions.

Technical Services

The following are brief details of some of the services provided by the Department to individuals, institutions and organizations. For more details of these and other services provided, see Appendix I.

Market Reporting Service

Reports covering supply, demand, quality, prices and price movements were issued on trading days to the media and others for:

- fruit, vegetables and cut flowers sold at the Wholesale Fruit and Vegetable Markets, Flemington; and
- livestock sold at the Homebush, Wagga Wagga, Dubbo, Tamworth, Gunnedah, Armidale, Casino and Goulburn wholesale markets (reporting at Moree ceased during the year due to the effects of the drought on livestock yardings).

In addition, metropolitan retail prices of fruit, vegetables, meat and fish, were collected, and reports issued daily; and wholesale prices for grains, butter, cheese, bacon, ham, pollard and eggs were collected and reports included weekly or fortnightly in the Weekly Marketing Notes which summarized the week's trading activities in all markets.

Seasonal Conditions Reporting Service

Publication continued of the monthly Survey of New South Wales Pastoral and Livestock Conditions and the monthly Report on Production Trends covering the more important crops grown in New South Wales, dairying products, wool sales, stock slaughtering and meat production.

Fleece Measurement Service

The Trangie Fleece Measurement Service enabled both stud and flock Merino breeders to obtain production information on all rams and demonstrated the value of fleece measurement information to commercial producers.

The number of rams tested increased by 37 per cent to 41 300 rams from 131 studs. On-stud auction sales continued as an annual event, with more studs adopting the practice annually. Information on greasy wool production and fibre diameter, as provided by the Service, was available for each ram. Analysis of sale results show a positive price response to increasing greasy wool production.

At the 1981 Goulburn and Dubbo ram sales, 60 per cent of studs offered objective measurement data in the sale catalogue. The standardized format for the presentation of measurement details in sale catalogues was well received.

Meatsheep Testing Service

Funds were received from the Australian Meat Research Committee for establishment of a Meatsheep Sire Testing Service. This is based at Cowra and will provide a testing service for ram breeders similar to the Fleece Measurement Service operating from Trangie. The data recorded will be growth rate and fat depth, and will be used to rank rams for stud selection or sale.

Public Watering Places

The Department continued to maintain and improve public watering places on stock routes in the Western Division. This cost \$168,000 in addition to income provided by Western Division Pastures Protection Board from rentals.

Plant Health Diagnostic Services

Plant Specimens handled for disease identification totalled 1 956 and 1 292 for parasitic nematodes. Plant diseases recorded for the first time totalled 47, and 11 455 specimens were added to the Biology Branch Herbarium. Entomological inquiries totalled 4 958 including 2 773 specimens for identification. During the year, 7 375 specimens were added to the collection.

Australian Inoculants Research and Control Service

This Service, financed by the Australian Agricultural Council controls the quality of legume inoculants prior to release and tests the standard available at retail outlets in all States.

A total of 155 cultures were tested during production and of these 142 were passed. Of 205 packeted inoculants tested from retail outlets, 177 reached the necessary standard.

Certified Seed Production

Statistical information is given in Appendix I. New schemes for Ransom and Dickie soybeans and Bargo jointvetch commenced operation during the year.

Animal Health Diagnostic Service

The Veterinary Diagnostic Laboratory Service was expanded during the year with the opening of the fifth Regional Veterinary Laboratory, at Orange.

This laboratory, together with the central laboratory at Glenfield, provides the diagnostic services for Government veterinarians and private practitioners. Some 15 400 specimen consignments were received, apart from 3 million serum samples for tests under the Bovine Brucellosis Eradication Campaign. Details are tabled in Appendix I.

Mastitis Advisory Service

This Service, provided jointly by the Department and the Dairy Industry Marketing Authority, assists in the control of mastitis in dairy herds. The bulk milk cell count (BMCC) provides an objective measure of mastitis level at the herd, factory, district and State levels. The service has been responsible for substantial reductions in BMCC—from 620 000 cells per ml in 1975–76 to 469 000 cells per ml in 1980–81. The proportion of farms with cell counts less than 250 000 increased from 5 per cent to 17 per cent during the year.

Graham Park Breeding Services

The Graham Park Breeding Services Unit (formerly known as the Artificial Stock Breeding Centre) is now controlled by the Department following transfer of responsibility from the former Dairy Industry Authority. Operation of the services, headquartered at Berry, was improved by:

- appointment of a field service officer to the far north coast;
- development of new marketing arrangements for semen;
- intensification of farmer training programmes;
- introduction of a royalty system for procurement of bulls for use in the sire evaluation plan.

Garden Advisory Service

Three full-time garden advisers located at head office provided a phone-in and counter service for the general public. Demand for their services has steadily increased over the past three years. In 1980–81, 31 367 inquiries were handled comprising 28 050 by telephone, 2 498 over the counter, 713 by post and 106 on field visits.

During the year a Garden Line two minute recorded message was introduced. Messages are topical and are changed each week. Response to the new service has been variable but averaged 68 calls per week.

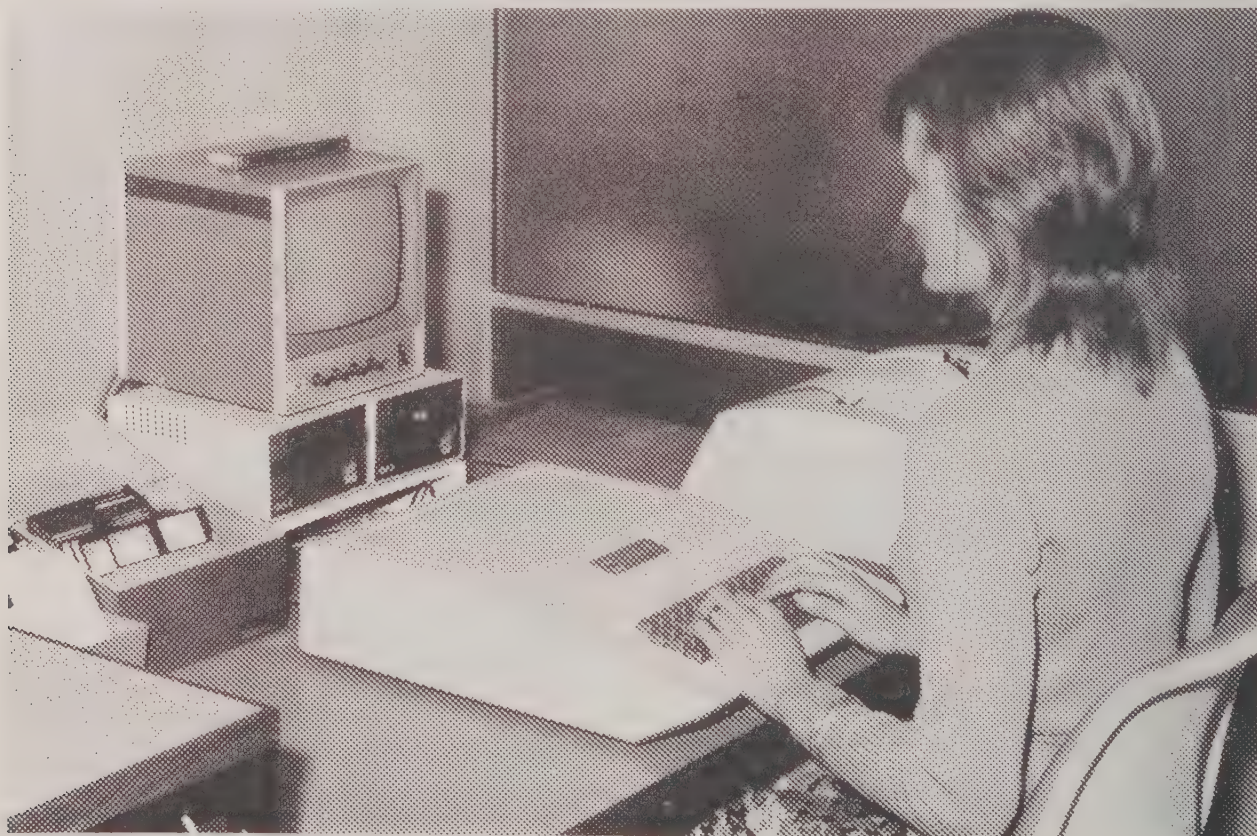
Other activities of the garden advisers included lecturing to garden clubs and horticultural societies, visiting nurseries and revising publications.

Administration

The major administration effort during the year was in setting up an efficient organizational structure to achieve the Department's objectives of expanding the advisory service and developing a stronger regional framework. At the end of the year the Department's organizational and administrative structure was more streamlined than it was, and in a position to respond to the new demands placed upon it. A full description of the steps in the process is to be found in Appendix V. More detail on the structural changes is to be found under "Restructuring of the Department" on page 10.

The new organizational structure includes an Executive consisting of the Director-General, Deputy Director-General, and four Executive Directors. The Executive Directors (appointed at Assistant Director-General level) have responsibilities for administration, advisory and research services, policy and services, and

Modern office equipment has been installed in Head Office and Regional centres to streamline communications and management procedures.



regulatory services. Regional Directors of Agriculture, Chiefs of Divisions and the Chairman of the Biological and Chemical Research Institute, Rydalmere, report to the appropriate Executive Director on a functional basis.

Responsible to the Executive are two major organizational arms of the Department—the Head Office Divisions and the five Regions, all having some overlapping responsibilities for the research, advisory, and regulatory functions of the Department and for the identification, co-ordination and implementation of State-wide programmes.

Regional Structure

The regional structure involved establishment of five Regions from 1st July, 1981, for all the Department's responsibilities, replacing five research regions, eight advisory regions and eleven veterinary districts. Each Region is headed by a Regional Director of Agriculture who is supported by Regional Directors each with responsibility for veterinary services, research services, and advisory services; and there is a Regional Administrative Officer. The Regional Director of Agriculture, the Regional Directors, and the Regional Administrative Officer constitute a Regional Board of Management. In three of the new larger regions the Regional Directors of Advisory Services are supported by a Director of Advisory Services, and in Region 5 the Regional Director of Research is assisted by a Director of Research. All these positions, except the Regional Directors of Research, were established during the year.

Each Regional Executive, to become operative on 1st July, 1981, will be located to reflect the greatest need and represent an efficient distribution of resources in accordance with the agricultural demands of the Region. The locations are:

	RDA, RAO, RAA	RDR	RDVS	RDAS	DAS	DR
North Coast, Region 1	Wollongbar ARC	Wollongbar ARC	Lismore	Lismore		
New England, Hunter and Metropolitan, Region 2.	Gunnedah	Tamworth ARC	Armidale	Maitland	Gunnedah	
Orana and Far Western, Region 3	Dubbo	Trangie ARS	Dubbo	Dubbo	Orange	
Central Western, South Eastern and Illawarra, Region 4.	Orange	Orange AR & VC.	Goulburn	Goulburn		
Murray and Riverina, Region 5	Leeton	Yanco ARC	Wagga	Wagga	Leeton	Wagga ARI

RDA (Regional Director of Agriculture), RAO (Regional Administrative Officer), RAA (Regional Administrative Assistant), RDR (Regional Director of Research), RDVS (Regional Director of Veterinary Services), RDAS (Regional Director of Advisory Services), DAS (Director of Advisory Services), DR (Director of Research), ARC (Agricultural Research Centre), ARS Agricultural Research (Station), AR & VC (Agricultural Research and Veterinary Centre), ARI (Agricultural Research Institute).

The new Regional structure created considerable challenges for all staff to integrate staffing and other regional resources in an orderly and efficient manner.

Head Office Divisions

During the year a new Division of Research and Advisory Services was established by amalgamating the Division of Research Services with the Division of Extension Services. Similarly, the Division of Plant Industries was established, incorporating the Division of Plant Industry with the Division of Horticulture. The other Divisions are: Animal Production; Animal Health, and Marketing and Economics. Each Division is still headed by a Chief. The administrative Branches were brought together under a Chief Administrative Officer. The Biological and Chemical Research Institute at Rydalmere is a regionalized Division, to be headed by a Chairman at the level of Chief of Division.

Divisions will be primarily responsible for policy advice to the Executive and the Minister, and will ensure that State-wide and inter-Regional programmes are properly co-ordinated, and will maintain high professional standards of staff in the disciplines for which they are responsible. Regions operating under extensive new delegations are to be the operational arm of the Department. They will implement programmes and ensure that the Department's services are properly co-ordinated at the Regional level, and will increase contact with farmers.

Delegations

Concurrent with the new Regional structure is the delegation of many routine decisions to the Regions. Many working parties were set up to review delegations and operating procedures and, by the end of the year, new delegations were promulgated in leave, general administrative, financial, recruiting, and other matters.

The findings of a working party set up to report on a regionalized accounting system were progressively implemented. The recommendations involved: New delegations and procedures in purchasing, requisitioning, ordering, and paying for goods and services; appointing authorizing officers under section 41 of the Audit Act to the Regions; Regional examination and retention of vouchers, and preliminary work to establish Regional drawing accounts. Concurrent with this, a new Regional financial reporting system was introduced to keep the Executive informed of the financial status of each of the Regions and, when consolidated, of the Department as a whole.

Budget Estimates and Financial Control

The budget estimates submitted to Parliament under the existing Divisional format have now become inappropriate and outdated in the Department's new

structure. The Treasury was formally approached with a request that the Department be permitted to submit its estimates to the Treasury in a single appropriation whilst at the same time providing the same quality and quantity of financial information required by the Treasury. The Treasury was unable to grant this request at the time owing to the acceleration of the budget timetable.

The newly established Budget Priorities Committee met a number of times to review the Department's expenditures and to recommend annual estimates.

The Accounts Inspection Branch was abolished and a new up-graded Management Audit and Analysis Branch introduced to carry out high level financial and efficiency audits.

New procedures were adopted within the Department to improve the processing of drought relief applications. The volume of applications placed a considerable burden on those administrative sections involved.

Staff Establishment

A major impact on the operations of the Department during this critical time was the suspension of recruiting, transfers and appointments. The Department worked as best it could within these guidelines and used existing resources wherever possible to prevent dislocations in its services to the rural community. In spite of this the suspension created many problems and some important services had to be slowed down.

The Staff Establishment Review Committee was up-graded and all vacant positions to be filled, and recommendations for transfers of positions, now require formal approval from this Committee.

Co-ordination between the financial status of the Department monitored by the Budget Priorities Committee, and the administrative and staffing status monitored by the Staff Establishment Review Committee, is ensured by Executive membership of each Committee.

The Department's staff establishment was placed on a word processor and a new information system introduced to provide weekly reports of vacancies, persons on leave without pay, locations of positions, and an overall report of staff numbers. This new system is invaluable in providing regular information to the Staff Establishment Review Committee.

Every Division in Head Office was reviewed by the Staff Establishment Review Committee and new staffing levels were set. Many of the surplus positions resulting from this review and many other positions falling vacant were reviewed and regionalized. In all, 193 positions were located or re-located in the country.

Achievement Awards Scheme

A new Achievement Awards Scheme was introduced to recognize the many years of service given by dedicated Departmental officers whose services are largely unseen and unrecognized. This Scheme was enthusiastically received. The Suggestion Awards Scheme was strengthened and regular meetings of the Suggestion Awards Scheme Committee were initiated.

Administrative Policy Trainee Scheme

The Department participated in the new Administrative Policy Trainee Scheme introduced by the Public Service Board and designed a comprehensive programme for the three Administrative Policy Trainees that entered the Scheme through the Department of Agriculture.

Senior Personnel at 30th June, 1981

- Minister—Hon. J. R. Hallam, M.L.C.
- Director-General—G. H. Knowles.
- Deputy Director-General—Dr K. P. Sheridan.
- Executive Director (Administration)—S. J. Day.
- Executive Director (Research and Advisory Services)—Dr S. G. Grimmett.
- Executive Director (Regulatory Services)—G. R. Gregory.
- Executive Director (Policy and Services)—J. E. Jessup.
- Executive Assistant to Director-General—R. J. Jessup.
- Executive Assistant to Deputy Director-General—F. S. Benecke.

- Marketing and Economics—Dr D. E. Maccallum.
- Research and Advisory Services—K. E. Hutton.
- Plant Industries—R. A. Claxton.
- Administration—R. T. Swan.

Regional Directors of Agriculture:

- North Coast—N. W. Vane.
- New England and Metropolitan—Dr A. N. Smith.
- Orana and Far Western—O. R. Southwood.
- Central Western, South Eastern and Illawarra—Dr D. G. McDonald.
- Murray and Riverina—B. D. Scarsbrick.

Chiefs of Divisions:

- Animal Health—D. A. Dickinson.
- Animal Production—P. T. Gilchrist.

- Chief Biometrician—E. A. Roberts.
- Director of Pesticides and Environmental Studies—L. R. Greenup.

Staff Statistics

Departmental Staff Establishment at 30th June, 1981

	Professional				Total	General and Ministerial			Clerical	Total
	Res.	Ext.	Educ.	Admin.		Reg.	Other	Total		
Central Administration	1	..	..	35	36	17	6	23	118	177
Animal Production	37	111	..	22	170	13	79	92	26	288
Animal Health	29	35	..	16	80	842	558	1 400	191	1 671
Plant Industries	107	109	..	29	245	154	31	185	31	461
B. & C.R.I.	70	..	..	7	77	..	84	84	21	182
Biometrical	13	..	..	2	15	..	..	..	4	19
Marketing and Economics	30	..	..	3	33	..	17	17	12	62
Research and Advisory Services	11	39	..	33	83	..	365	365	181	629
Agricultural Education	..	..	43	3	46	..	126	126	33	205
Pesticides Registration	..	..	..	5	5	10	..	10	9	24
Total	298	294	43	155	790	1 036	1 266	2 302	626	3 714

Summary of Research Staff—30th June, 1981
Numbers of Staff Engaged or Directly Supporting Research Activities

	Research	Technical Support	Managerial, Clerical and General Support	Total
North and Central Coast Directorate*	45	56	94	195
North and North Western Directorate*	45	51	63	159
Central Western Directorate	32	50	75	157
South and South Eastern Directorate*	30	49	43	122
South Western Directorate	14	15	58	87
Glenfield Research Units†	36	87	39	162
Biological and Chemical Research Institute, Rydalmere	70	72	35	177
Dairy Research Centre, Richmond	7	12	4	23
Head Office‡	19	23	29	71
	298	415	440	1 153

* Includes staff at regional veterinary laboratory.

† Includes Glenfield Veterinary Station, the Noxious and Feral Animals Unit, Drought Research Unit and the Agricultural Engineering Centre.

‡ Includes staff in the Divisional offices in Sydney, Biometrical Branch and officers with CSIRO units in Sydney.

Advisory Staff Statistics—30th June, 1981

Advisory Staff	North Coast	New England	Western	Central West	Southern	South West	South East and Illawarra	Mid Coast and Hunter	Total
Regional Director of Extension	1	1	1	1	1	1	1	1	8
Assistant Regional Director of Extension.	1	1	1	1	1	1	1	1	7
Field Assistant	5	5	3	4	3	6	5	3	34
Extension Officer	3	3	2	3	1	2	3	3	20
Research/Extension Liaison Officer	..	1	..	..	..	..	..	..	1
Regional Publicity Officer	1	1	1	1	1	1	1	1	8
Migrant Liaison Officer	..	..	..	..	..	1	..	..	1
Clerical Officer	3	3	2	3	3	3	2	2	21
Stenographer and Typist (including casual).	16	9	9	10	8	12	12	11	87
Special/Assistant Principal Agronomist.	..	2	2	1	1	1	..	..	7
District Agronomist	6	9	7	8	4	10	8	5	57
Agronomist	..	1	..	1	1	1	..	..	4
Field Officer (Weeds)	..	1	1	1	..	1	..	..	4
Seed Production Officer	..	1	1	1	3	..	..	..	6
Tobacco Officer	..	1	..	..	..	..	..	..	1
Special Livestock Officer (Sheep and Wool).	..	1	..	1	..	..	1	..	3
Livestock Officer (Sheep and Wool)	..	4	6	4	4	4	1	..	23
Livestock Officer (Beef Cattle)	3	4	2	2	3	1	4	..	21
Livestock Officer (Pigs)	1	2	..	3	1	1	1	2	11
Livestock Officer (Apiculture)	..	1	1	..	..	..	1	..	3
Livestock Officer (Poultry)	..	1	..	..	..	..	..	3	4
Livestock Officer (Sheep Fertility Service).	..	..	..	..	1	..	..	..	1
Principal Horticulturist	1	..	..	..	..	..	..	..	1
Special Horticulturist	..	..	..	..	..	1	..	..	1
District Horticulturist	6	1	1	2	1	7	2	6	26
Supervising Inspector (P.D. Act)	1	..	..	1	..	1	..	..	3
Inspector (P.D. Act)	7	3	1	3	3	15	2	7	41
District Livestock Officer (Dairying)	6	..	..	..	1	..	3	4	14
Livestock Officer (Dairying)	7	..	..	..	1	1	2	6	17
Herd Organizer	..	..	..	..	..	..	1	1	2
Herd Recorder	7	..	..	..	..	4	15	10	36
Agricultural Mechanization Officer	1	2	1	1	1	1	1	..	8
Economist	1	3	2	2	2	2	1	1	14
Locust Patrol Officer	..	..	1	..	..	..	..	..	1
Market Officer	1	2	2	..	1	..	..	..	6
Technical Advisor (Vertebrate Pests)	..	..	1	..	..	..	..	..	1
Pesticides Inspector	1	1	1	1	..	1	1	1	7
Pastures Protection Officer	..	1	1	..	1	..	1	..	4
Research/District Agronomist	..	..	..	..	..	..	..	1	1
Others	..	..	..	..	..	..	..	1	1
Total	79	65	50	54	47	77	70	72	514

Staff at Agricultural Colleges—30th June, 1981

Location	Professional				General			Administrative and Clerical	Total
	Res.	Educ.	Admin.	Total	Res.	Other	Total		
Orange	..	20	1	21	..	31	31	19	71
C. B. Alexander Tocal	..	11	1	12	..	44	44	7	63
Yanco	..	12	1	13	..	51	51	7	71
Total	..	43	3	46	..	126	126	33	205

Appendix I

SERVICES TO OTHER DEPARTMENTS AND ORGANIZATIONS

The State Meat Inspection Service provided 501 batches of specimens for various research and teaching institutions.

Animal Health

Veterinary assistance (a total of 234 services) was provided to livestock on properties administered by the State Departments of Education, Corrective Services, National Parks and Wildlife Service, Police, Health Commission, the Dairy Industry Marketing Authority as well as to the Department of Aboriginal Affairs, Universities and the Commonwealth Scientific and Industrial Research Organization.

Animal Health Diagnostic Services

The following two tables list the origin and sources of specimen consignments, other than those directly concerned with the Brucellosis Eradication Campaign, received in 1980-81, and the number of serum samples received for tests under the Bovine Brucellosis Eradication Campaign during the years 1975-76 to 1980-81 at the Department's veterinary laboratories.

Number of Serum Samples received for tests under the Bovine Brucellosis Eradiction Programme 1975-76 to 1980-81

Eradication Testing	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Glenfield	112 700	88 500	948 720	479 330	1 354 070	1 076 960
Armidale	72 800	62 320	737 110	988 190	758 150	335 400
Orange*	..	..	..	..	..	..
Wagga Wagga	27 370	22 230	17 760	232 190	866 690	657 350
Wollongbar	20 000	87 220	1 029 200	923 040	463 680	265 910
Total	232 890	260 270	2 732 790	3 622 750	3 442 590	2 593 827
Abattoir monitoring	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Glenfield	144 100	213 500	295 490	279 640	255 630	206 080
Armidale	64 300	103 060	110 100	134 700	189 780	236 650
Orange*	..	..	..	..	..	3 020
Wagga Wagga	21 950	40 950	26 290	15 430	18 100	21 020
Wollongbar	31 900	41 780	103 600	112 390	83 830	129 630
Total	262 900	399 290	535 480	560 160	547 430	597 220
Overall Totals	495 140	659 560	3 268 270	4 270 820	3 990 020	3 191 047

* From March, 1981.

Origin and Source of Specimen Consignments other than those directly concerned with the Brucellosis Eradication Campaign—1980-81

Animal	Regional Veterinary Laboratories					Central Veterinary Laboratories Glenfield†	Total
	Armidale	Glenfield	Orange*	Wagga Wagga	Wollongbar		
Cattle	1 119	2 349	89	628	1 446	4 210	9 811 (44)
Sheep	1 009	1 459	105	1 361	70	665	4 669 (21)
Pigs	242	396	30	329	219	303	1 519 (7)
Poultry	244	204	19	108	112	910	1 597 (7)
Other Animals	839	902	45	581	1 186	750	4 303 (19)
Other Specimens	43	140	20	14	95	100	412 (2)
Total	3 496	5 450	308	3 021	3 128	6 938	22 341 (100)

Source							
Private Practitioners	1 950	3 409	145	1 878	1 747	..	9 129 (59)
Veterinary Inspectors	741	1 221	88	797	459	..	3 306 (21)
Departmental Officers	561	670	66	342	904	..	2 513 (17)
Others	244	150	9	4	18	..	425 (3)
Total	3 496	5 450	308	3 021	3 128	..	15 403 (100)

* From March, 1981.

† Consignments referred to CVL for specialist examination.

Certified Seed Production

During 1980–81, 542.6 tonnes of certified pasture seed and 209.7 tonnes of field crop seed were produced, as follows:

Pasture Species	Tonnes	Field Crops	Tonnes
Subterranean Clover	96.8	Lupins	142.4
Annual Medics	..	Soybeans	14.7
Hunter River Lucerne	32.5	Certified Maize	15.1
Other Lucernes	135.7	Adzuki Beans	2.4
White Clover	37.4	Foundation Maize	..
Other Pasture Legumes	2.4	Chickpea	18.2
Kangaroo Valley Rye-grass	23.8	Mung Beans	16.9
Tama Ryegrass	..	Total	209.7
Phalaris	127.0		
Cocksfoot	64.7		
Tall Fescue	..		
Kikuyu	21.6		
Tropical Grasses	0.7		
Total	542.6		

Seed Testing

The Seeds Laboratory tested 6 585 seed samples, as follows:

Type or source of seed	Number of samples
Quarantine (Export and Import)	838
Regulatory (taken by Departmental Inspectors)	43
Certified—	
pasture	350
maize and sorghum	154
lupin	31
Industry—	
miscellaneous	1 095
rice	53
Department	588
Registered Cereal Seed	1 035
Other Departments (including Police)	77
Seeds for identification	122
Australian wheat collection (equivalent to 1/3 normal sample)	2 199
Total	6 585

Chemistry Branch Services

The following services were provided from the Biological and Chemical Research Institute and from regional laboratories:

(a) Analytical	Number of samples	Number of analyses
Plant analysis	8 143	57 384
Soil chemistry	14 738	104 665
Soil physics	2 459	10 849
Fertilizer analysis	82	160
Water analysis	1 479	17 070
Stockfeed analysis	585	1 158
Pesticide analysis	1 790	2 970
Biochemical assays	1 600	1 600
Essential oils analysis	99	281
Cereal quality evaluations	1 025	10 100
Metabolizable energy	154	308
Body composition—poultry	816	1 383
Total	32 970	208 928

(b) Advisory	Number of reports
Plant nutritional diagnoses	1 165
Fertilizer quality assessments	82
Soil fertility assessments	1 106
Soil physical/irrigation suitability assessments	225
Water quality assessments	1 429
Pesticides advice	45
Essential oil quality assessments	99
Cereal export certification	25
Other expert opinions	15
	4 191

(c) Land Use Assessment for	Number	Area involved
Department of Agriculture	2	hectares 200 400
Department of Environment and Planning	3	361 000
Shire Councils	2	23 000

Argentine Ant Eradication Campaign

	Number	Area
		hectares
Infestations found	5	95.5
Spraying	..	83.9
Surveys—properties	43	443.9
Re-surveys—properties	7 242	1 415.9

Appendix II

SUMMARY OF DEPARTMENT'S REGULATORY ACTIVITIES UNDER VARIOUS STATE AND COMMONWEALTH ACTS

(a) State Acts

Agricultural Holdings Act, 1941
Matters referred to Agricultural Committees—7.
Agricultural Seeds Act, 1921
Seed inspected—4 133 tonnes.
Visits to stores—201 tonnes.
Samples collected—43 tonnes.
Warnings issued—13 tonnes.

Apiaries Act, 1916
Apiaries registered—4 483.

Cattle Compensation Act, 1951

Compensation was paid for 14 687 cattle ordered to be destroyed on account of suspected disease and for six carcasses condemned during meat inspection.

Diseases on which claims were paid follow:

Disease	Claims	Cattle and carcasses
Brucellosis	3 471	14 538
Johne's disease	10	13
Tuberculosis	47	133
Tick fever	2	3
Total	3 530	14 687

Farm Produce Agents Act, 1926
Licences issued—212.

Fertilizers Act, 1934

Re-registrations	605
New registrations	41
Registrations refused	15
Samples analysed:	
submitted by advisory officers	76
submitted by inspectors	6
Warnings issued	1

Horticultural Stock and Nurseries Act, 1969

Nurserymen registered	2 474
Resellers registered	3 200

Meat Industry Act, 1978

The State Meat Inspection Service carried out antemortem and/or postmortem inspections of livestock at abattoirs and slaughterhouses throughout the State. This regulatory function is aimed essentially at the production of clean, wholesome meat.

Inspection of carcasses and viscera *(Section 23 (3))

Adult cattle	1 903 102
Calves	262 156
Sheep, lambs and goats	9 449 766
Pigs	1 180 013

* Including inspections under the Commerce (Trade Descriptions) Act for export purposes.

Reinspection of meat from other States and New Zealand (Section 43)

	Carcasses	Piecemeats
Beef	108 112	9 797 637 kg
Calves/veal	116 577	159 008
Sheep and goats	435 007	685 502
Pigs and pork	47 900	4 117 645
Processed meats		12 534 903

Pastures Protection Act, 1934:	
Sheep brands and earmarks registered	1 861
Pest Destroyers Act, 1945:	
Applications for registration	1 236
Applications for new labels	940

Pesticides Act, 1978

Applications for—	
registration of individual pesticides	1 670
registration of individual labels	3 500
approval of containers	3 200
issue of permits	400

Plant Diseases Act, 1924

District inspections—	Number
Orchard, plantations, vineyards (for advice/ regulatory action)	11 949
Orchard, plantations, vineyards (for planting statistics only)	2 315
Fruit shops and stalls	4 765
Home gardens	29 722
Grain storages and processing premises	724
Notices issued for pest and disease control	418
Nurseries	2 418
Resellers	2 169
Media release/publications	170

Market inspections

Numbers of packages covered by detention notices issued for non-compliance with grading, packing or labelling regulations—

Apples	41 033 + 114 bins
Pears	40 263 + 21 bins
Citrus	22 215 + 6 bins
Grapes	2 092 +
Bananas	513
Tomatoes	29 249
Rockmelons	9 074 + 21 bins
Potatoes	29 851 + 70 bins
Vegetables	16 552 + 74 bins
Mangoes	1 544
Peaches	66
Avocados	293
Nectarines	5
Strawberries	20
Castaway Certificates	3 250
Total	192 770 + 306 bins

Prosecutions—two (both successful).

Potato Growers Licensing Act, 1940

Registrations of potato growers	350
Inspections of properties	497

Poultry Processing Act, 1969

The 108 registered poultry processing plants were inspected, involving 162 visits.
There were no prosecutions.

Registration of Stock Brands Act, 1921

Brands for large stock registered	2 096
-----------------------------------	-------

Stock (Artificial Insemination) Act, 1948

Three artificial breeding centres and five subcentres were registered. Certificates of Competency to inseminate cows were issued to nine persons.

Stock (Chemical Residues) Act, 1975

Samples of fat collected from cattle slaughtered at 16 export abattoirs were analysed for the presence of chemical residues. Cattle found to exceed the maximum residue limit (MRL) were detained on 18 properties. Twenty three properties were under detention orders on 30th June, 1981: eight being for dieldrin, 11 for DDT, three for heptachlor and another 11 were under investigation.

Analysis of 11 310 samples showed that 6 806 (60 per cent) were free of all residues. A total of 4 525 pesticide residues were detected in 4 207 samples, some samples having several residues.

Pesticide residues in 4 207 samples from New South Wales cattle, 1980–81

Residue	MRL (ppm)	Number of Samples with Residues			
		Above MRL	50–100 per cent MRL	Below 50 per cent MRL	Total
DDT	5	22	31	3 922	3 975
Dieldrin	0.2	62	96	258	416
HCB	0.5	1	5	6	12
Heptachlor	0.2	13	13	76	102
Other		3	6	11	20

Stock Diseases Act, 1923

Quarantine was applied for the following diseases:

Disease	Number quarantines	
	Properties	Stock
Anthrax	29	24 725
Brucellosis in cattle	3 000	
Lice in sheep	930	1 096 844
Ked in sheep	1	2
Lice and ked in sheep	6	2 550
Tuberculosis in cattle	53	
Tuberculosis in pigs	2	
Tuberculosis in poultry	5	

Cattle tail tags:

New Applicants	1 167*
Transfers	408

* Some of these applications were made when re-ordering tags to obtain a certificate showing the check digit.

Prosecutions

Relating to Tail tagging	1
Lice in sheep	24
Footrot in sheep	3
Swill feeding in pigs	2
Border crossing	12
Bovine brucellosis	5
Tick Quarantine Area	3
	—
Total	50
	—

Activity in the control of brucellosis and tuberculosis in cattle is summarized in the standard format adopted for the National Brucellosis and Tuberculosis Eradication Campaign:

30th June, 1981	
Bovine Brucellosis for New South Wales	
Herds (Total)	56 472
Dairy Herds	3 733

Monitoring

* Abattoirs—	
Blood samples	511 743
Confirmed reactors	2 074
Confirmed reactors (per cent)	0.4
Herds in which reactors were found	1 148
* Milk Ring Testing (MRT)	
Herds checked	3 247
Positive MRT herd tests	57
MRT herds blood tested	43
* Field Testing (6 per cent, or Routine, or Sample)—	
Herds tested	2 986
Cattle tested	128 251
Reactors	821
* Total Monitoring	
Herds tested	39 353
Herds positive	1 551
Cattle tested	639 994
Reactors	2 895

Eradication

Herds tested during year	20,130
Blood samples tested	2 493 100
Reactors	10,828

Disposal of Reactors

Reactors for which compensation paid	14 538
Net compensation paid (\$)	1 650 134

Vaccination

Cattle vaccinated with Strain 19	3 232
Doses of Strain 45/20 used	0

Infection Data-progress

Herd Status:

	30th June, 1980		30th June, 1981	
	No.	Per cent	No.	Per cent
Not assessed	14 301	(24.7)	7 202	(12.8)
Suspect	1 777	(3.1)	727	(1.3)
Infected	2 081	(3.6)	644	(1.1)
Restricted	2 275	(3.9)	1 142	(2.0)
Provisionally clear	3 111	(5.4)	2 933	(5.2)
Tested negative	21 119	(36.5)	20 504	(36.3)
Monitored negative	147	(0.3)	2	(0.0)
Confirmed free*	13 016	(22.5)	23 291	(41.2)
Accredited free	13	(0.0)	27	(0.0)
Prevalence (per cent)				
Herd	4.61		1.31	
Individual	0.16		0.06	

* Confirmed Free herds can move anywhere in Australia. They only need a Form 3 and the approval of an Inspector.

Bovine Tuberculosis for New South Wales—Provisionally Free Area, 30th June, 1981:

A. Basic Statistics—

1. Number of cattle herds	65 089
2. Number of cattle	5 917 435

B. Monitoring

1. Abattoirs—	
(a) Number of cattle slaughtered	2 165 258
(b) Number with TB lesions (presumed plus confirmed)	23
(c) Number successful tracebacks to herd of origin	22
(d) Percentage of successful tracebacks	96
2. Testing—	
(a) Number of cattle tested	11 601
(b) Number of reactors	53
(c) Total number of herds tested	53
(d) Number of herds confirmed infected	5
(e) Number of herds tested from traceback	21

C. Eradication—

1. Number of infected herds (F1 plus those detected for the year)	34
2. Number of herds tested	77
3. Number of cattle infected herds	16 723
4. Number of individual cattle tests	24 049
5. Number of reactors	55

D. Disposal of Reactors—

1. Number of reactors detected	108
2. Number of reactors slaughtered	107
3. Number of reactors autopsied (meatworks and field)	107
4. Number of reactors with lesions	40
5. Number of reactors for which compensation paid	127
6. Number of casual cases for which compensation paid	6
7. Net compensation paid	\$22,869.92

E. Laboratory—

1. Number bacteriological accessions	71
2. Number with confirmed tuberculosis	45

F. Infected Herds—

1. Number of infected herds at beginning of year	20
2. Number cattle in infected herds at beginning of year	10 741
3. Number of infected herds at end of year	14
4. Number of cattle in infected herds at end of year	2 446

G. Prevalence (per cent)—

1. Herd	0.021
2. Individual	0.00017

Major activities of the Board of Tick Control

Activity	Cattle	Number	Horses	Carcasses
Examinations	2 301 300		37 473	350 625
Dippings (including voluntary dipping)	2 599 394		1 504	
Spraying	7 502		30 848	
Policy examinations	482 457			
Stock movement control	1 122 005		19 127	

The laboratory of the Board of Tick Control at Lismore carried out 12 007 acaricide and lime estimations and 4 348 mud estimations on dip samples. Analyses were done on 11 310 abattoir samples for pesticides residues monitoring and on 2 649 fat samples taken from cattle on traceback properties.

Queensland Border Control

Inspections on the border outside the Tick Quarantine Area supervised the entry into New South Wales of 317 921 cattle, 803 828 sheep, 23 626 pigs, 13 654 horses, 20 378 goats and 258 other animals.

Stock Foods and Medicines Act, 1940

<i>Stock Medicines—</i>	
Re-registrations	1 539
New registrations	532
Refused	6

<i>Stock Foods—</i>	
Registrations	1 770
Prosecutions relating to	
* failure to comply with chemical analysis	14
* sale of unregistered products	4
	18
	—

<i>Swine Branding Act, 1940</i>	
Brands registered	836

Swine Compensation Act, 1928

Compensation was paid for 11 pig carcasses condemned during meat inspection on account of septicaemia.

Veterinary Surgeons Act, 1923

The Veterinary Surgeons Boards approved 106 new registrations and 1 275 re-registrations of veterinary surgeons. The Veterinary Investigations Committee investigated eleven complaints for professional misconduct, all of which were dismissed.

(b) Commonwealth Acts

Quarantine Act, 1908

On behalf of the Commonwealth Government, the New South Wales Department of Agriculture administered sections of this Act relating to the importation of plants and animals and their products.

Activities under Quarantine Act—

	Number	
<i>Passenger clearance—</i>		
By sea—		
Vessels met	57	
Passenger arrivals	52 391	
Quarantine interceptions	853	
By air—		
Flights met	7 399	
Passenger arrivals	1 269 167	
Quarantine interceptions	181 920	
	Plant	Animal
<i>Prosecutions—</i>		
Quarantine Act	89	6
Customs Act	17	39
Both Acts	150	51
<i>Quarantine—</i>		
Fees collected	834 698	196 697
<i>Parcels post—</i>		
Parcels examined	17 881	7 481
Parcels needing quarantine action	5 105	842

Plant Quarantine—

	Number
Import permits issued	52 287
Cargo—	
<i>General—</i>	
Vessels attended	743
Seed sampled for examination	750
Vehicles steam cleaned	2 285
<i>Containers—</i>	
Vessels discharged Sydney Port and Botany	903
Containers discharged	171 481
<i>Action on Containers*—</i>	
FCL's immediate delivery	91 304
FCL's depot inspection	31 613
LCL's depot inspection	46 396
FCL's country inspection	1 090
FCL's city approved premises	1 398
FCL's follow up inspections	1 343
Infringements revealed	74
<i>International airport terminal (tonnes)</i>	69 803
<i>Richmond RAAF terminal (tonnes)</i>	58 150
<i>Timber imports</i>	609 969 m³
<i>Quarantine treatments</i>	15 243 m³
<i>Approved premises for processing</i>	153
Nursery Stock—	
<i>Ornamentals to approved quarantine houses</i>	23 195
<i>Plant Quarantine Station—number of lines, being—</i>	7 251
Seeds for Department and Universities	375
Seeds for private imports	12
Fruit trees for Department	36
Other imports for Department	3
Plants for private importers	6 695
Exotic pest interceptions—	
<i>Giant African snail Achatina fulica</i>	6
<i>Woodwasps Siricidae</i>	5
<i>Dampwood termites Zootermopsis augusticollis</i>	4
<i>Drywood termites Kalotermitidae</i>	4
<i>Carpenter ants Camponotus pennsylvanicus</i>	3
<i>Exotic snail Chloritis sp.</i>	1
<i>Khapra beetle Trogoderma granarium</i>	1
<i>Trogoderma inclusum</i>	1
<i>Trogoderma sp.</i>	1
<i>Yellow jackets Vespula pensylvanica</i>	1
<i>Fruit fly Dacus sp.</i>	1

* FCL, full container load; LCL, less than full container load.

Animal Quarantine—

	Number
<i>Animals Imports—</i>	
Landing permits issued	1 908
<i>Animals landed—</i>	
Domestic livestock	1 564
Animal pets	1 695
Aquarium fish	2 893 399
Others	3 163
<i>Animals entering quarantine—</i>	
Dogs and cats	580
Horses and donkeys	204
<i>Semen imported—</i>	
Cattle (doses)	26 178
Dog (doses)	5
<i>Animal product imports—</i>	
Landing permits issued	2 153
<i>Main products landed(t)—</i>	
Tinned meat	1 000
Chilled/frozen meat	1 909
Cheese	5 049
Fish products	2 194
Hide and glue pieces	2 232
Fish meal	1 145
Stock feed	190
Wool	760
<i>Ships pets—</i>	
Animals bonded	323
Fish bonded	1 544
<i>Animal Exports—</i>	
Health certificates issued	2 261
<i>Main exports—</i>	
Domestic livestock	3 635
Animal pets	2 362
Birds and poultry	1 583
Day-old chickens	533 651
Hatching eggs	770 134
Others	159 619

Commerce (Trade Descriptions) Act, 1905

Grain	Tonnes	
	Inspected	Rejected
Ships surveyed for grain export (number)	132	64
Wheat	3 312 143	28 481
Barley	32 938	Nil
Fresh fruit and vegetables	Packages	
	Inspected	Rejected
Apples	142 232	19 238
Pears	89 969	5 892
Citrus	184 424	4 786
Stone fruits	130 814	3 770
Grapes	50 936	5 342
Strawberries	6 721	337
Pineapple	8 376	1 352
Mango	55 230	3 793
Rockmelon	11 121	Nil
Tomato	32 975	425
Other fruit	7 933	Nil
Potatoes	23 484	675
Onions	66 553	3 190
Other vegetables	110 217	1 503
General		Inspected
Rice	55 000 tonnes	
Malt barley	28 848 tonnes	
Vegetable seed	3 152 packages	
Palm seed	2 318 packages	
Plants	2 854 packages	
Pasture seed	9 472 sacks	
Maize seed	1 656 bags	
Nuts	481 cartons	
Empty containers	4 353	

Appendix III

FINANCIAL SUMMARY 1980-1981

Departmental

The Department of Agriculture's day-to-day running costs are met from Consolidated Revenue Fund. Receipts from the administration of various Acts of Parliament, as well as contribution from the Commonwealth towards certain specified functions, are paid into the Consolidated Revenue Fund. Expenditure during 1980-81 by the Department totalled \$66,853,513 from Consolidated Revenue Fund while revenue amounted to \$15,418,786. The expenditure of \$57,798,287 financed, among other things, such functions as—

Cattle Tick Control	\$8,243,063
Maintenance—Agricultural Colleges	\$7,028,095
Biological and Chemical Research	\$3,997,168
Maintenance of Various Research Stations	\$10,566,800

Extension and Applied Research

Apart from finance from Consolidated Revenue the Commonwealth Government provides a special grant known as the Commonwealth Extension Services Grant. Expenditure from this source amounted to \$1,305,216 during 1980-1981 and was devoted entirely to extension and applied research.

Other Research Finance

Funds provided by industry, semi-government bodies and special Commonwealth Government grants are utilized in many research programmes and projects conducted by the Department of Agriculture. The Department relies heavily on this finance for research work and these sources provided \$2,450,140 in 1980-81. Expenditure for the year amounted to \$2,159,634.

Capital Works Programmes

Funds for various capital works programmes are provided from General Loan Account and Commonwealth Government grants under the Advanced Education Acts. General Loan is financed by the State of New South Wales, while Advanced Education is financed by the Commonwealth.

Expenditure in 1980-1981 on capital works was \$2,199,464 from the General Loan Account.

ACCOUNTS OF DEPARTMENT OF AGRICULTURE
FOR THE YEAR 1980-1981

The cost of maintaining the Department of Agriculture is met from the Consolidated Revenue Fund, whilst capital expenditure on buildings, equipment and permanent improvements to Departmentally owned property is a charge on the General Loan Account.

In addition to these sources of funds, the Department is assisted in financing certain lines of research and development, together with the control of insects pests and animal diseases, by levies on industry by grants from the Commonwealth, semi-government and public and private organizations. Operations in this category are reflected in a large number of accounts within the classification of "Special Deposits" Accounts. The operations on some of the more significant Special Deposits Accounts are detailed later in this report.

Comparative Statement of Expenditure

Account	1979-80	1980-81	Variation (+) or (-)
	\$	\$	\$
Consolidated Revenue Fund	57,798,287	66,853,513	9,055,226 +
General Loan Account	2,500,000	2,119,464	380,536 -
Special Deposits Accounts	31,591,529	30,744,738	846,791 -
	91,889,816	99,797,715	7,907,899 +

Consolidated Revenue Fund Expenditure

Following are details of expenditure from Consolidated Revenue Fund for the previous two years:

Budget Heading	1979-80	1980-81	Variation (+) or (-)
	\$	\$	\$
Central Administration	8,296,261	6,585,256	1,711,005 -
Biological and Chemical Research Institute	3,369,597	3,997,168	627,571 +
Plant Industry	4,592,410	5,188,799	596,389 +
Horticulture	4,429,013	4,941,850	512,837 +
Research Services	8,693,793	10,566,800	1,873,007 +
Agriculture Education and Extension Services—(a)	2,570,576	7,028,094	4,457,518 +
Animal Health and Production	18,688,326	20,302,483	1,614,157 +
Cattle Tick Control	7,158,311	8,243,063	1,084,752 +
	57,798,287	66,853,513	9,055,226 +

- (a) The previous budget heading was Agricultural Colleges. It was changed for 1980-81 year to incorporate the Extension Services component previously recorded within Central Administration.
- (b) Includes State contribution to National Bovine Tuberculosis and Brucellosis Eradication Campaign of \$2,844,366. This amount was transferred to Special Deposits Account. Details are given later in this report.

General Loan Expenditure 1980-81

	\$
Glenfield Veterinary Research Station—	
Cottage	4,134
Laboratory Extensions	58,144
Water Supply	23,627
Leeton Agricultural Research Station—	
Landforming	19,889
Orange Agricultural Research and Veterinary Centre—	
Glasshouse	2,576
Laboratory/Administration Building	665,149
Rydalmere Biological and Chemical Research Institute—	
Workshop	43,712
Temora Agricultural Research Station—	
Grain Storage	72,237
Wagga Agricultural Research Institute—	
Grain Shed	46,365
Yanco Agricultural Research Centre—	
Farm Square Development	40,000
Plant and Equipment—	
Purchases for whole of the Department	1,142,827
Road Construction or Renewal for the whole Department	80,804
	\$2,199,464

Special Projects or Services within the Department

Transactions on some of the more significant special projects or services within the Department's operations during 1980-81 are given in following pages.

Graham Park Breeding Services, Berry

From 1st July, 1980, the operations of the Artificial Stock Breeding Service, Berry, transferred from the control of the Dairy Industry Authority of New South Wales to the Department of Agriculture. The Service was subsequently renamed Graham Park Breeding Services. Details of income and expenditure for the year ended 30th June, 1981, are as follows:

Income	\$	\$
Berry Semen Sales	191,826	
Purchased/Consignment Semen Sales	122,391	
Sale of Goods and Liquid Nitrogen	75,539	
Miscellaneous Fees	82,572	
Total Income		472,328

Expenditure	\$	\$
Salaries and Payments in the nature of		
Salaries	213,204	
Subsidiary Staff Changes	32,234	
Subsistence and Transport Expenses	35,302	
Stores	264,686	
General Operating Expenses	62,641	
Plant and Equipment	4,014	
Purchase of Motor Vehicles	24,902	
Purchase of Bulls	19,800	
Total Expenditure		656,783
Deficit		184,455
Add Other Income—		
Sale of Government Property		18,118
Net Deficit		\$166,337

As at 30th June, 1981, outstanding debtors totalled \$95,654 whilst expenditure commitments amounted to \$19,187. As all debts and commitments arose since 1st July, 1980, these figures should be taken into account in determining the effective result for the year. This reduced the net deficit for the year ended 30th June, 1981, to a truer figure of \$89,870.

Commonwealth Grants for State Secondary Schools Technical Training Projects

These funds are made available by the Commonwealth under the State's Grants (Technical Training) Acts. Works under the first triennium (1st July, 1965 to 30th June, 1968), were completed at a total cost of \$800,000, and works under the second triennium (1st July, 1968 to 30th June, 1971), were completed at a total cost of \$1,227,000. Works under the third triennium (1st July, 1971 to 30th June, 1974), have been completed at a total cost of \$2,586,375.

A summary of receipt and expenditure of funds under the third triennium is shown hereunder—

	\$	\$
Grant received from Commonwealth (including supplementation)		2,590,000
Expenditure to 30th June, 1980	2,582,811	
Expenditure 1980-81		
Yanco Agricultural College		
Lecturers' Office Block	3 564	2,586,375
Balance of funds		3 625

Commonwealth Grant for Colleges of Advanced Education

(1) Major Capital Projects	\$	\$
First Triennium 1st January, 1967 to 31st December, 1969.		
Total Expenditure First Triennium		800,930
Second Triennium 1st January, 1970 to 31st December, 1972.		
Total Expenditure Second Triennium		4,418,471
Third Triennium 1st January, 1973 to 31st December, 1975.		
Total Expenditure Third Triennium		4,557,603
Annual Allocation—1975		
Total Expenditure		49,607
Annual Allocation—1977		
Total Expenditure		29,342
Annual Allocation—1978		
Total Expenditure		21,841
Annual Allocation—1979		
Expenditure to 30th June, 1980	63,174	
Expenditure 1980-81—		
Orange Agricultural College		
Office/Printery	1,088	
Carpenter's Workshop	563	
Purchase of Equipment	4,387	69,212
Annual Allocation—1980		
Expenditure 1980-81—		
Orange Agricultural College		
Ablution Block	13,350	
Water Supply	2,488	
Portable Building	21,620	
Purchase of Equipment	31,958	69,416
Annual Allocation—1981		
Expenditure 1980-81—		
Orange Agricultural College		
Purchase of equipment	9,381	9,381
Total Expenditure to 30th June, 1981		10,025,803

(2) Library Grants	\$
No Expenditure 1980-81.	
Expenditure to 30th June, 1981.	
Hawkesbury Agricultural College	50,435
Orange Agricultural College	34,690
Wagga Agricultural College	29,773
	114,898

Australian Development Assistance Bureau Working Account

The finance for Australian Development Assistance Bureau projects is provided by the Bureau. In addition to providing technical expertise and advice, the projects in various countries are managed by Departmental personnel. Details of the operations of the Special Deposits Account for the assistance are given below for the year ending 30th June, 1981.

	\$	\$
Balance as at 1st July, 1980		550,462
Receipts during the year—1980-81		1,863,098
		2,413,560
Less Expenditure	\$	
Salary and Allowances	676,586	
Travelling Expenses	96,165	
Materials and Equipment	678,001	
Other Expenses	8,011	
Overhead Expenses	87,046	
Advances	146,397	1,692,206
Balance at 30th June, 1981		\$721,354

The expenditure on specific projects is detailed hereunder:

Bangladesh Cattle Project No. 028506		
Salaries	285,131	
Materials and Equipment	249,648	
Other Operating Costs	95,613	\$630,392

Sri Lanka -Lower Uva Project Phase I, No. 004701		
Salaries, allowances	322,247	
Construction Unit	420,314	
Other Operating Costs	69,370	\$811,931

Sri Lanka—Lower Uva Project, Phase II, No. 004002		
	\$	\$
Salaries and Allowances	15,191	
Materials and Equipment	6,258	
Other Operating Costs	3,177	\$24,626

Seychelles Dairy Cattle Project No. 086801		
Salaries and Allowances	31,445	
Other Operating Costs	36,757	\$68,202

Department of Construction—Canberra, building Project in Bangladesh	
Advances	134,483

Department of Agriculture, Support Unit	
Salaries and Allowances	22,527
Total Expenditure—1980-81	\$1,692,206

Australian Inoculants Research and Control Service—Working Account

The Australian Inoculant Research and Control Service (A.I.R.C.S.) came into being in 1970, with the approval of Agricultural Council for the specific purpose of maintaining quality control in legume inoculants. It succeeded the University of Sydney's Department of Agriculture Laboratory Service (U.D.A.L.S.), an earlier service, which was commenced in 1956. U.D.A.L.S. was set up because many sowings of pasture legumes were failing because of poor nodulation.

The objectives of A.I.R.C.S. are four-fold. Firstly, to ensure that the quality of legume inoculants on sale in Australia at least reaches a required minimum standard. This objective relates to the numbers of bacteria in inoculants, and their effectiveness as nitrogen fixers. The second objective is to seek more effective strains, and also strains for use with new legume crops. Thirdly, A.I.R.C.S. is responsible for monitoring the number of Rhizobium bacteria. If pre-manufacturers fail consistently to meet prescribed standards, then A.I.R.C.S. is required to identify the causes and instigate research programmes to overcome the problems.

A.I.R.C.S. was initially housed at the Biological and Chemical Research Institute, Rydalmere, and was moved to the Horticultural Research Station, Gosford, in 1973.

Following is a statement of receipts and payments for the above account for the year ended 30th June, 1981.

		\$	
Balance at 1st July, 1981		37,928	
Receipts—	\$		
Contributions from—			
New South Wales	15,170		
Queensland	6,150		
South Australia	4,920		
Tasmania	820		
Victoria	5,330		
Western Australia	8,610	41,000	
		78,928	
Payments—			
Salaries	42,348		
Operating Expenses	34,901	77,249	
Balance as at 30th June, 1981		1,679	

Cattle Compensation Fund

Balance as at 1st July, 1980		\$	3,473,525
Receipts—		\$	
Interest		263,200	
Levies		246	
Stamp Duty		201,507	
Commonwealth Contributions			
Tuberculosis Reactors		8,076	
Commonwealth Contributions			
Brucellosis Campaign	1,134,761	1,607,790	
			5,081,315
Payments—			
Compensation—			
National Brucellosis	1,650,110		
National Tuberculosis	21,607		
State Brucellosis	25		
State Tuberculosis	1,263		
Other Diseases	3,692		
Other payments	14,533		
		1,691,230	
Administration Costs of Department of Agriculture	41,538	1,723,768	
Balance in fund at 30th June, 1981			3,348,547
Balance of \$3,348,547 includes \$2,800,000 invested by the Treasury at an interest rate of 9.4 per cent per annum.			

Cattle Compensation Payments 1980-81

Disease Group	Number of Claim				Number of Animals				Payment Details			
	Reg. 5	Reg. 6	Section 5 (1) E	Total	Reg. 5	Reg. 6	Section 5 (1) E	Total	Reg. 5	Reg. 6	Section 5 (1) E	Total
Babesiosis	1	..	..	1	1	..	..	1	\$ 270	..	..	270
Brucellosis	3 470	..	1	3 471	14 537	..	1	14 538	1,650,110	..	25	1,650,135
Johnes Disease	10	..	..	10	13	..	..	13	2,822	..	..	2,822
Tick Fever	1	..	..	1	2	..	..	2	600	..	..	600
Tuberculosis	41	6	..	47	127	6	..	133	21,607	1 263	..	22,870
Other Claims	32	..	..	32	143	..	..	143	14,535	..	..	14,533
Total	3 555	6	1	3 562	14 823	6	1	14 830	1,689,942	1 263	25	1,691,230

Commonwealth Extension Services Grant

Name of Item Project	Expenditure	
	1979-80	1980-81
	\$	\$
Regional/Development Research	857,511	861,669
Market and Marketing Information	49,829	15,271
Information Services	336,247	254,822
Farm Financial Management	51,347	10,101
Farm Organization and Operations Management	131,936	120,184
Staff Training and Development	36,412	37,289
Evaluation of Extension and Applied Research	230	880
Other Organizations	5,000	5,000
	\$1,468,512	\$1,305,216*
* 1980-81 Grant	1,072,392	
Carryover from previous years	232,824	
	\$1,305,216	

The specific purpose grant previously provided by the Commonwealth for extension services has been discontinued in its previous form, and offset by an equivalent increase in general financial assistance grants to the States. Consequently, extension programmes are now being funded wholly from State Consolidated Revenue Funds from 1st July, 1981.

Eradication of Bovine Tuberculosis and Brucellosis—Working Account

Balance in fund at 1st July, 1980		\$	1,318,072
Income			
Contributions by New South Wales			2,374,902
Contributions by Commonwealth			5,928,706
Fees for Services Rendered			769
			9,622,449
Expenditure		\$	
Salaries, wages and associated charges	6,958,409		
Travelling expenses	115,021		
Vehicle running costs	538,717		
Postage and Telephone	130,460		
Freight and cartage	78,372		
Stores equipment	624,849		
Maintenance and sundries	70,480		
Rent and Rates	132,731		
Payments to private practitioners			
for tuberculosis testing	161		
for brucellosis vaccinating	31,808		
for brucellosis sampling	62,302	94,271	
Administration costs		200,000	
Purchase of Capital Plant and equipment		104,301	
Purchase of Motor Vehicles		153,229	
Land, building and improvements		101,673	9,302,513
Balance as at 30th June, 1981			319,936

Against the balance of \$319,936 quoted above, must be considered firm commitments of \$537,160 for Capital items and \$106,600 for other items. The commitment of \$537,160 for capital items is made up of—

	\$
Replacement motor vehicles	490,910
Air conditioner	470
Base aerial for two-way radio	280
Centrifuges	11,280
Water bath	1,601
Diluting machine	2,669
Incubator	3,500
Dynatech heads	1,560
Sundry items of laboratory equipment	24,890
	<u>\$537,160</u>

and does not take into account the proceeds from the sale of the replaced vehicles. The Commonwealth's contribution for 1980-81 was \$2.24 for each \$1 contributed by the State.

Meat Inspection Service

The Meat Inspection Service is administered by virtue of the Meat Industry Act, which makes provision for a scale of fees. Following is a statement of receipts and costs associated with this Service for the year ended 30th June, 1981:

	\$	\$
Receipts from inspection fees		7,824,446
Less—		
Salaries, wages and associated items	6,178,383	
Travelling expenses and vehicle running costs	502,487	
General stores, freight and cartage	57,568	
Books, periodicals and printing	2,928	
Rent, cleaning, electricity, phone and postages	8,907	
Laundry expenses	24,226	
Sundry expenses	404	
Overhead expenses*	1,126,639	7,901,542
Net deficit on Meat Inspection Service		<u>\$77,096</u>

* Overhead expenses of \$1,126,639 include administration charges, workers' compensation insurance premium payroll and employer's contribution to superannuation funds not charged direct.

Noxious Insects Destruction Account during 1980-1981

The Noxious Insects Act provides for the striking and collection of a levy under certain specified conditions. Moneys received from the levy are paid into a Special Deposits Account and applied by the Minister for purposes of the Act. Following is a financial statement of the operations of this account during 1980-1981.

	\$
Balance as at 1st July, 1980	142,466
Receipts—	\$
Levies	1,191,782
Sale of insecticides	159,108
Sale of Assets	5,646
	<u>1,356,536</u>
	1,499,002

Payments—	
Contribution to Australian Plague Locust Commission	321,318
Equipment purchases	6,378
Insecticide purchases	142,522
Maintenance/Repair of equipment	2,502
Materials and Sundry purchases including cyclone fencing	1,777
Motor Vehicle running costs	12,360
Repayment of Treasury Loan	250,000
Salaries	21,084
Sundry Expenses	7,018
Travelling expenses	4,676
	<u>769,635</u>

Balance as at 30th June, 1981	<u>\$729,367</u>
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During 1980-1981 the fund repaid to the Treasury an advance of \$250,000 received in 1976-77. Advances still repayable \$500,000 received in 1978-79 and \$1,200,000 received in 1979-80 and it is intended to progressively repay these in the future.

Swine Compensation Fund

Following is a summary of operations on the Swine Compensation Fund for year ending 30th June, 1981.

	\$
Balance in fund as at 1st July, 1980	1,358,502
Receipts—interest	108,000
	<u>1,466,502</u>
Payments—	\$
Compensation	800
Administration costs	5,579
Research Costs	33,584
	<u>39,963</u>
	<u>\$1,426,539</u>

Balance of \$1,426,539 includes \$1,200,000 invested by The Treasury at an interest rate of 9 per cent per annum.

Veterinary Surgeons Act

This Act provides for the establishment of a Board of Veterinary Surgeons for New South Wales. Fees and penalties collected are paid to the credit of Consolidated Revenue Fund from which the administrative expenses of the Boards are met.

Below is a statement of Receipts and Payments for the year ended 30th June, 1981.

Receipts		Payments	
Application Fees	\$ 10	Administration	\$ \$
Complaint Fees	300	Advertising	107
Examination Fees	30	Examination Expenses	417
Registration Fees	2,180	General Expenses	45
Restoration Fees	640	Postage	1,863
Role Fees	42,153	Printing and Stationery	2,992
		Registrar General Fee	10
		Refund—Complaint Fees	340
		Salaries	27,878
			<u>33,652</u>
		Board of Veterinary Surgeons	
		Members' Fees	2,609
		Members' Travelling	1,470
			<u>4,079</u>
		Investigating Committee	
		Members' Fees	1,225
		Members' Travelling	1,333
			<u>2,558</u>
		Excess of Receipts over Payments	<u>5,024</u>
	<u>\$45,313</u>		<u>\$45,313</u>

Fund created by Wheat Marketing (Barring of Claims) Act, 1929

The Wheat Marketing (Barring of Claims) Act barred all claims under wheat marketing operations conducted by the Government in earlier years and directed that after making

of specified grants for research purposes, surplus moneys from operations be paid to a fund for investment.

Income from investments may be applied, as the Minister for Agriculture determines, towards agricultural education and research. Financial results for 1980-81 are as follows:

Revenue Account for year ended 30th June, 1981

	\$	\$
Interest on Investments and Savings		7,319
Transfer of unutilized revenue to Accumulated Funds	367	
Commitments entered into during the year	6,952	7,319

Balance Sheet at 30th June, 1981

LIABILITIES	\$	\$	ASSETS	\$
Accumulated Fund—				
Balance as at 1st July, 1980	111,031		Investments in Government Securities (Face Value)	109,800
Unutilized revenue at 30th June, 1981	367		Commonwealth Bank Savings	3,080
		111,398	Accrued interest	1,518
Commitments at 30th June, 1981		3,000		
		114,398		114,398

**Statement of Receipts—Consolidated Revenue Fund
Year ended 30th June, 1981**

Receipts for Service Rendered—

	\$
Rents	111,841
Student Fees	354,325

Fees—

Apiary Registrations	22,302
Dairy Industry Act	129
Farm Produce Agents	458
Fertilizers Act	5,731
Pest Destroyers Act	93,297
Poultry Processing Act	2,120
Stock Brands Registration	18,997
Stock Foods and Medicines Act	50,105
Swine Brand Registrations	1,882
Veterinary Surgeons Act	44,973

Contribution from Commonwealth—

For Administration of Plant Quarantine	1,833,166
For Administration Animal Quarantine	716,634
For Administration of Commerce Act	681,000
For Laboratory on dairy detergents and sanitizers	55,114
For Export Certification of Livestock	110,475
From C.S.I.R.O. for Cotton Research	77,078
From Apprentices full time training scheme	18,324

	\$
Fees—	
Dipping	26,705
Inspection—Plant Disease Act	49,796
Inspection—Meat Industry Act	7,824,446
Herd Recording	358,871
Seed Certification and Testing	30,089
Miscellaneous	235,383
Administration Costs—Cattle Compensation Fund	41,538
Administration Costs—Swine Compensation Fund	5,458
Commission on premium, collected	28,590
Miscellaneous receipts for service rendered	582,895
Total Receipt for Services Rendered	13,381,722

General Miscellaneous Receipts—

Fines and Forfeitures (including bond liability)	5,620
Interest	1,095
Fees and sales—Graham Park Breeding Service	472,328
Sale of Farm Produce	1,094,168
Sale of Government Property	149,050
Repayments to credit of previous year's votes	211,726
Transfer of part balance of Special Deposits	
Accounts no longer required	(12)
Miscellaneous Unclassified Receipts	17,147
Pastures Protection Board 3 per cent Contribution	202,032
Employer's Liability to State Superannuation Fund	366,850
Sale of Publications	16,315
Fees—Public Officers	745

Total Miscellaneous Receipts	2,537,064
Grand Total—All Receipts	15,918,786

Appendix IV

COMMITTEES, COUNCILS, TRUSTS AND MARKETING BOARDS

Interdepartmental Committee on China.
 Grain Transport Handling Committee.
 Committee on Environmental Matters.
 N.S.W. Advisory Co-ordination Committee on Planning and Environment.
 Liquid Fuels Board.
 State Government Purchasing Policy Working Party.
 Working Party on Meat Inspection Administration.
 Working Party on Meat Inspection Fees.
 Animal Exportation Committee.
 Catchment Areas Protection Board of New South Wales.
 Interdepartmental Committee on Flood Relief.
 Interdepartmental Committee on Bush Fire Relief.
 Central Coast Research and Extension Committee.
 Irrigation Research and Extension Committee.
 Citrus Research/Extension Liaison Committee.
 Agricultural Chemicals Committee.
 Technical Advisory Committee to State Pollution Control Commission.
 Task Force on Incentives for Encouragement of Private Forestry.
 Interdepartmental Committee on Pesticide Residues and Economic Poisons.
 Departmental Committee on Pesticides Residues in Animals and Animal Products.
 Departmental Committee on Pesticide Residues in Plants and Plant Products.
 Pesticides Act Advisory Committee.
 Joint Rural Land Advisory Committee.
 Namoi Valley Pesticides Co-ordinating Committee.
 Argentine Ant Eradication Committee.
 New South Wales Government Inquiry into the Use and Safety of 2,4,5-T.
 Co-ordinating Committee of A.M.R.C. in Queensland on Pesticide Residues.
 McGarvie Smith Institute.
 Interdepartmental Working Party on Young Farmer Establishment Schemes.
 Committee of Inquiry into New South Wales Egg Industry.
 New South Wales Grain Handling Inquiry.
 New South Wales Remote Sensing Technical Working Party.
 Hunter Valley Conservation Trust.
 Rural Studies Board.
 Institute of Rural Studies.
 Albury/Wodonga Development Corporation.
 Rural Youth Council.
 Oat Industry Advisory Committee.
 Standing Committee on Drought Relief.
 Plague Locust Advisory Committee.
 Dairy Industry Marketing Authority.
 Board of Veterinary Surgeons of New South Wales.
 Chicken Meat Industry Committee.
 Working Party to Review Noxious Plant Administration.
 National Soil and Land Resource Survey Committee.
 National Association of Testing Authorities (NATA).
 New South Wales Stock Medicines Board.
 Coastal Council of New South Wales.
 Higher Education Board of New South Wales.
 State Mapping Advisory Committee.
 Wheat Uniform Quality Testing Committee.
 State Wheat Improvement Committee.
 Standing Advisory Committee on Wheat.
 Prime Wheat Growers Advisory Committee.
 Clean Waters Advisory Committee—Sewerage Sludge Disposal Sub-Committee.
 Laboratory Glassware and Related Apparatus, Standards Association of Australia.
 Pesticides and Agricultural Chemicals Standing Committee of the National Health and Medical Research Council.
 The Commonwealth Technical Committee on Agricultural Chemicals.
 Committee to Recommend Safety Directions and First-aid Statements for Pesticides Poison Schedule (Standing) Committee, National Health and Medical Research Council.
 The Standards Association of Australia Committee CH/5—Pesticides.
 The Poisons Advisory Committee Non-Therapeutic Sub-Committee, Health Commission of New South Wales.
 Barley Marketing Board.
 Oil Seeds Marketing Board.
 Grain Sorghum Marketing Board.
 Murray Valley (N.S.W.) Citrus Marketing Board.
 Oats Marketing Board.
 Yellow Maize Marketing Board.
 Central Coast (N.S.W.) Citrus Marketing Board.
 Tobacco Leaf Marketing Board.
 New South Wales Dried Fruits Board.

Appendix V

TIMETABLE OF SIGNIFICANT EVENTS IN THE DEPARTMENT OF AGRICULTURE, 1980-1981

7th July—Mr G. H. Knowles, formerly Commissioner, Soil Conservation Service, took up duties as Director-General.

July/August—Seminars, addressed by the Minister for Agriculture, the Hon. J. R. Hallam, M.L.C., and the Director-General, to discuss how the Department can increase its advisory activity and its further regionalization. Seminars were held at Tamworth, Lismore, Wagga Wagga, Dubbo and Sydney.

18th August—New Human Resource Development activities for extension officers approved.

25th August—Information to all staff on the review of matters raised at the Seminars. These included Human Resource Development, Promotional Opportunities and Status of Extension Staff, Amalgamation of Departmental Offices in one Country Town, Open Office Planning, Access to STD Facilities, Delegations, Promotion of the Department and its Services.

11th September—Appointment of Mr S. J. Day as Assistant Director (Administration).

10th October—Major policy circular by the Director-General to all staff on—

(a) the establishment of the five new Agricultural Regions, each to be headed by a Regional Director of Agriculture.

(b) the establishment of the Regionalization Working Party headed by Dr F. C. Butler to:

1. Determine the infrastructure of each Region.
2. Identify resources available in each Region and the additional resources required.
3. Determine the levels of administrative and financial delegations to each Region.
4. Formulate proposed management procedures of each Region.

(c) the restructuring of the Executive to consist of:

Director-General.
 Deputy Director-General.
 Executive Director (Administration).
 Executive Director (Research and Advisory Services).
 Executive Director (Regulatory Services).
 Executive Director (Policy and Services).

(d) the appointment of—

Dr K. P. Sheridan as Deputy Director-General.
 Mr S. J. Day as Executive Director (Administration).

(e) the establishment of the Division of Plant Industries by the amalgamation of the Division of Plant Industry and the Division of Horticulture, and the establishment of the Division of Research and Advisory Services by the amalgamation of the Division of Research Services and the Division of Extension Services;

(f) the appointment of—

Mr R. T. Swan as Chief Administrative Officer.
Mr D. A. Dickinson as Chief, Division of Animal Health.

(g) the establishment of the Special Advisory Unit to advise the Minister on the activities of the Statutory Authorities under his legislative responsibilities.

27th October—Appointment of—

Mr J. E. Jessup as Executive Director (Policy and Services).
Dr S. J. Grimmett as Executive Director (Research and Advisory Services).

Mr G. R. Gregory as Executive Director (Regulatory Services).

Seven new District Agronomist positions being established at Griffith, Wagga, Forbes, Manilla, Bathurst, Gloucester, Kempsey (previous approval for Nyngan).

3rd November—Board of Management formed consisting of Executive. The Executive Assistant to the Director-General to be the Executive Officer of the Board of Management.

Budget Priorities Committee established consisting of the Executive Directors and chaired by Dr Kevin Sheridan.
Mr A. Smith, Financial Controller, appointed Executive Officer of the Committee.

Staff Establishment Review Committee (SERC) upgraded to include the Executive Directors with Dr K. P. Sheridan, Deputy Director-General, as Chairman and Mr R. T. Swan, Chief Administrative Officer, as Executive Officer.

10th November—Location of the five Regional Headquarters decided as:

1. North Coast Region—Lismore.
2. New England, Hunter and Metropolitan Region—Gunnedah.
3. Murray and Riverina Region—Leeton (Yanco).
4. Orana and Far Western Region—Dubbo.
5. Central Western, South Eastern and Illawarra Region—Orange.

Advertisements placed for Chief, Division of Plant Industries.

11th November—Mr F. S. Benecke appointed Executive Assistant to the Deputy Director-General.

Advertisement placed for Executive Assistant to Director-General.

13th November—Mr K. E. Hutton appointed as Chief of the new Division of Research and Advisory Services.

1st December—Appointment of Mr R. J. Jessup as Executive Assistant to the Director-General.

8th December—Appointment of—

Mr R. A. Claxton as Chief of the new Division of Plant Industries.
Mr J. K. Long as Deputy Chief, Division of Plant Industries.
Mr P. A. Witschi as Director, Special Advisory Unit.

9th December—Advertisements placed for the five Regional Directors of Agriculture.

9th January, 1981—Information to all staff on progress made in matters raised during the Minister's Extension Seminars held in July and August, 1980. Noted in particular were the amalgamation of certain country offices and the deletion of the term "Extension" and its replacement by "Advisory".

20th January—Appointment of: Regional Directors of Agriculture—

Mr N. W. Vane—Lismore.
Dr A. N. Smith—Gunnedah.
Mr B. D. Scarsbrick—Leeton.
Mr O. R. Southwood—Dubbo.
Dr D. J. McDonald—Orange.

12th February—Advertisements placed for—
Five Regional Directors of Veterinary Services.

Two Regional Directors of Research (for Yanco and Trangie).

A Director of Research for the Agricultural Research Institute at Wagga.

13th March—Advertisements placed for—

Five Regional Administrative Officers.
Five Regional Administrative Assistants.
Five Regional Directors of Veterinary Services—readvertisement.
Five Regional Directors of Advisory Services.

20th March—Major policy circular, by the Director-General, to all staff on policy concerning regional and divisional working relationships. This included information on the separate responsibilities of the Regions and of the Divisions.

23rd March—Appointment of—

Dr D. G. Saville—Regional Director of Research, Orana and Far Western Region (Trangie).
Mr E. J. Corbin—Regional Director of Research, Murray and Riverina Region (Yanco).
Dr E. C. Wolfe—Director of Research, Agricultural Research Institute, Wagga.

16th April—Appointment of—

Regional Directors of Veterinary Services—
Mr R. Bonner—Goulburn.
Mr S. Carroll—Wagga.
Mr J. Archer—Armidale.
Mr R. Weaver—Lismore.
Mr G. Wise—was later appointed at Dubbo.

Regional Administrative Officers—

Mr G. Foley—Orange.
Mr R. Mance—Leeton.
Mr M. Byrnes—Dubbo.
Mr R. Johnston—Lismore.

Regional Administrative Assistants—

Mr J. Rumble—Lismore.
Mr G. Scovell—Gunnedah.
Ms S. McCosker—Dubbo.

23rd April—Appointment of—

Regional Directors of Advisory Services—
Mr G. Rance—Wagga.
Mr R. Sproule—Goulburn.
Mr B. Clinton—Dubbo.
Mr B. Baillie—Maitland.
Mr P. Davey—Lismore.
Director of Advisory Services—
Mr K. Fishpool—Orange.

21st May—Advertisements placed for five Regional Liaison Officers.

25th May—Appointment of—

Regional Administrative Assistants—
Mr P. G. Mooney—Leeton.
Mr P. E. Graham—Orange.

1st June—Appointment of:

Dr J. P. Drinan as Principal, C. B. Alexander Agricultural College.
Mr L. W. Banks as Supervisor of Research Agricultural Research Station, Condobolin.

9th June—Appointment of—

Mr D. J. Hartley as Director of Advisory Services, Gunnedah.
Mr J. D. Baker as Director of Advisory Services, Leeton.

15th June—Appointment of—

Dr M. L. Curl as Supervisor of Research, Agricultural Research Station, Glen Innes.

17th June—Advertisement placed for five Regional Liaison Officers—readvertised.

30th June—Report to the Minister for Agriculture that the major objective of restructuring and regionalizing the Department was achieved.

Appendix VI

REPORT OF THE PRICKLY-PEAR DESTRUCTION COMMISSION FOR THE YEAR ENDED 30th JUNE, 1981

The Hon. J. R. Hallam, M.L.C., Minister for Agriculture.

Sir,

I submit the report of the Prickly-pear Destruction Commission for the year ended 30th June, 1981.

The Commission is responsible for the eradication and control of prickly-pear throughout New South Wales and all phases of the Commission's activities were continued during the year. Co-operation and good relationships were maintained with Government departments, shire and municipal councils, pastures protection boards, trusts, private organizations and individual land owners.

The objective of the Commission is complete eradication of prickly-pear from the State. However, this objective is not likely to be achieved due to the nature of the plant and the economics of such a plan. Complete eradication of prickly-pear is almost impossible because it is a very tenacious plant, which grows and thrives under practically any climatic conditions and is not affected by adverse seasonal conditions. Prickly-pear spreads and grows from seeds and parts of plants, and large areas of rough country are infested. The seeds remain viable in the ground for at least thirty years.

The Commission relies on spraying prickly-pear with chemicals and biological control to keep it in check. Due to high labour and chemical costs, spraying prickly-pear with chemicals has become very expensive, which has made it necessary to place much more reliance on biological control methods.

Biological control of prickly-pear with the insects cactoblastis and cochineal has never been very successful in some regions. This is due mainly to climatic conditions. However, spectacular success was achieved during the summer period, 1980-1981, by the use of the cochineal insect, *Dactylopius austrinus*, against *Opuntia aurantiaca* (tiger pear). The extremely dry conditions prevailing in New South Wales during the summer assisted the insects. *Opuntia aurantiaca* infestations on the Gwydir, Horton, Severn, Barwon, Moonie, Peel, Namoi, Castlereagh, Turon and Macquarie Rivers were reduced dramatically by insect attack.

The two scientific officers based at the Agricultural Research Centre at Tamworth, Dr J. R. Hosking and Mr P. Sullivan, assisted Commission field officers during the year by providing advice concerning biological control methods. Dr Hosking is employed by the Commission to investigate all aspects of the biological control of prickly-pear.

The headquarters of the Commission was re-located at Tamworth during October, 1980. This move was part of the Department of Agriculture's regionalization programme. The Commission is now located on 3rd Floor, G.I.O. Building, 1 Fitzroy Street, Tamworth.

A brick veneer office and depot building was erected on a site in an industrial subdivision at Singleton. The new facility

replaced rented premises in Singleton. Total cost of the project was \$90,000. The new depot was officially opened by the former Commissioner, Mr V. H. Gray, on 30th April, 1981. The Commission has a staff of seven field operatives at Singleton and the improved facilities will enable them to provide a more efficient service to landowners in the Singleton, Maitland and Muswellbrook districts.

The Commission continued to assist landholders, government departments, shire councils, pastures protection boards, trustees of commons, cemeteries, parks and reserves to destroy prickly-pear on lands under their control. Gangs of men are available for hire from the Commission to carry out prickly-pear eradication work. Much of this work is subsidized by the Commission on a dollar for dollar basis. A prickly-pear spray is supplied at cost price and when it is being purchased to eradicate tiger pear it is supplied at half price. The cost of free eradication work and free prickly-pear spray supplied during the year to landowners, government departments and instrumentalities, amounted to \$94,761.

The Commission has continued to make supplies of prickly-pear insects available to landowners free of cost. The insects are liberated and spread on properties where considered warranted.

The destruction of prickly-pear on all unoccupied Crown lands is the responsibility of the Commission. The work was continued throughout the year and the cost to maintain these areas was \$35,246.

Prickly-pear eradication work, which cost \$148,160, was carried out under contract by the Commission for two hundred and thirty-two private landowners. Some owners were assisted, regarding payment for the work, by allowing them to pay by instalments over a period of years at a low interest rate.

The total expenditure by the Commission for the year ended 30th June, 1981, was \$1,259,821, an increase of \$70,734 compared with last year.

Sundry debtors decreased by \$12,513. The amount outstanding is \$6,843 compared with \$19,358 last year.

There were forty-six prickly-pear leases covering an area of 22 355 hectares at 30th June, 1981, of which thirty-one comprising 15 949 hectares were leases in perpetuity.

The Prickly-pear Destruction Commission has a staff of three administrative officers, two scientific officers engaged on research work and fifty-four men on field duties. They comprise ten Public Service Board appointees and forty-nine employed under the Prickly-pear Act. The field staff operate from office and depot facilities at Dubbo, Mudgee, Scone, Singleton, Tamworth, Bingara, Ashford, Moree and Mungindi.

A statement of income and expenditure of the Prickly-pear Destruction Commission for the year ended 30th June, 1981, follows.

G. E. RYAN, Commissioner.

30th July, 1981.

Prickly-Pear Destruction Commission			
(Statement of Income and Expenditure as at 30th June, 1981)			
	\$		\$
Balance in Fund as at 30th June, 1980	2,231.85	Salaries	203,424.59
Supplementation from Consolidated Revenue	1,007,000.00	Wages	499,107.24
Special Appropriation	60,000.00	Allowances	26,017.04
(Miscellaneous Income)	190,589.35	Workers Compensation and Payroll Tax	55,177.94
		Salary Items not subject to Payroll Tax	8,179.71
		Travelling Allowances and Expenses	69,896.40
		Maintenance of Motor Vehicles and Caravans	109,534.25
		Purchase of Motor Vehicles and Caravans	127,075.34
		Purchase of Stock, Plant and Minor Equipment	125,775.18
		Rent, Rates, Freight and Cartage	7,095.69
		Buildings, Improvements and Insurances	23,555.74
		Postal and Telephone Charges	4,974.33
			1,259,813.45
		Balance Unexpended as at 30th June, 1981	7.75
	\$1,259,821.20		\$1,259,821.20

